

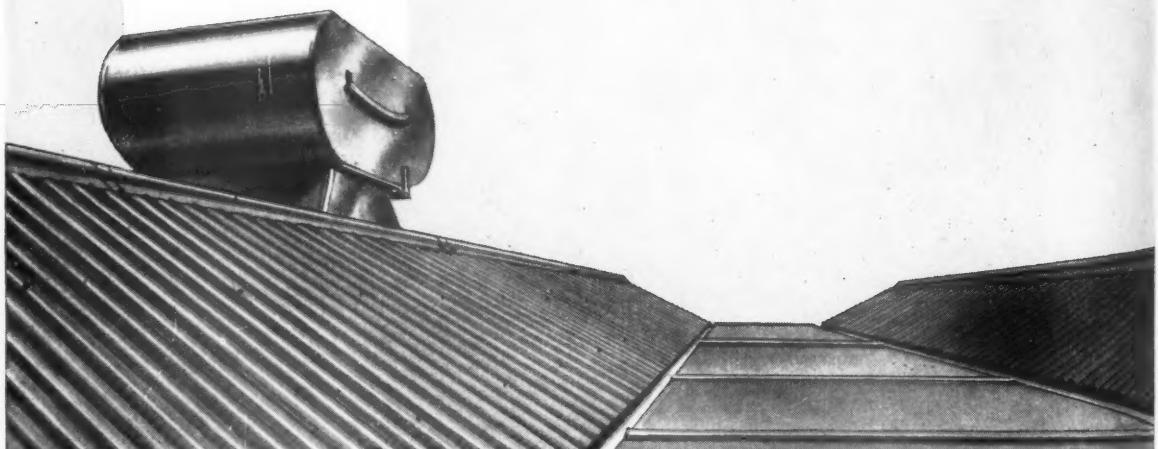
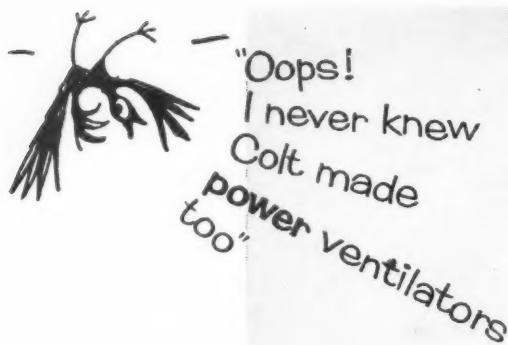
February 1961
Volume 68 Number 4
Price 3s. 6d.

RIBA JOURNAL

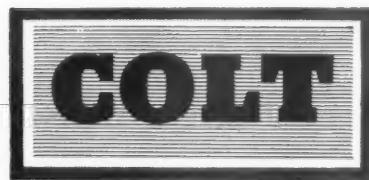
Architecture Library



Architecture Library



They do! For Colt have a ventilator, natural or powered, to meet every kind of problem—including a range of high powered ventilators such as the Upward Discharge unit shown here. Let the Colt Ventilation Service advise you. Powered or natural, or a combination of both—the Colt engineer will tell you which system is best and most economical for you. Send for a free manual to Dept. 37.

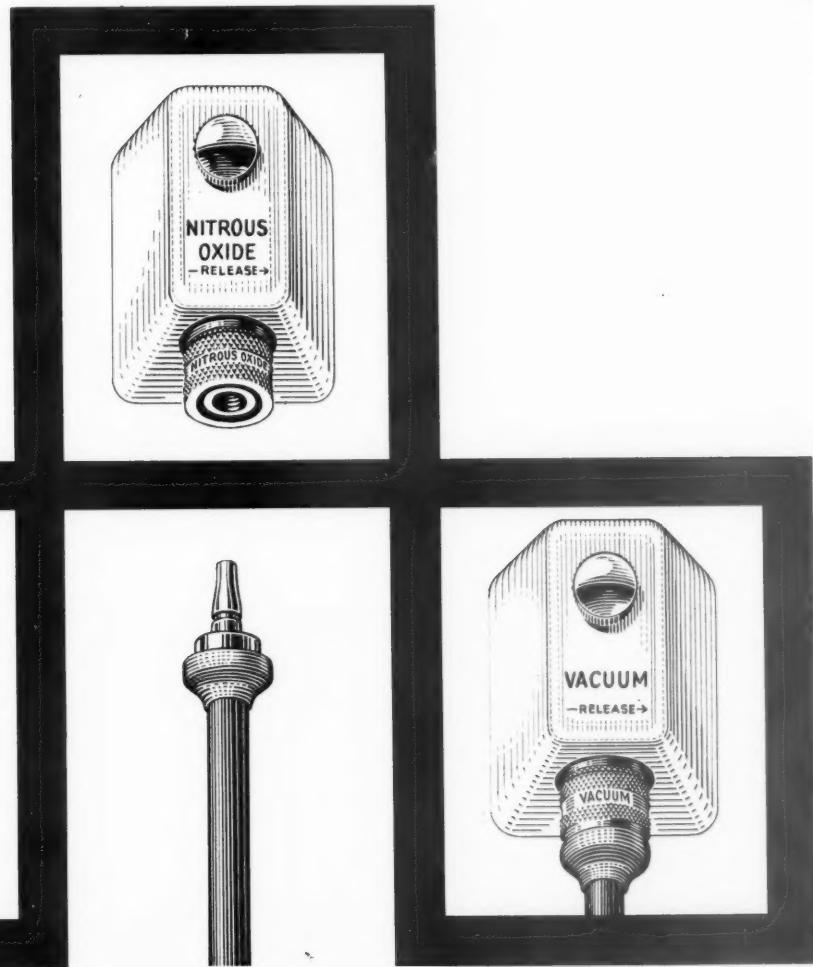


**The power behind
natural ventilation and naturally
behind powered ventilation too!**

COLT VENTILATION LIMITED · SURBITON · SURREY · Telephone: ELMbridge 0161



PIPELINES FOR MEDICAL GASES

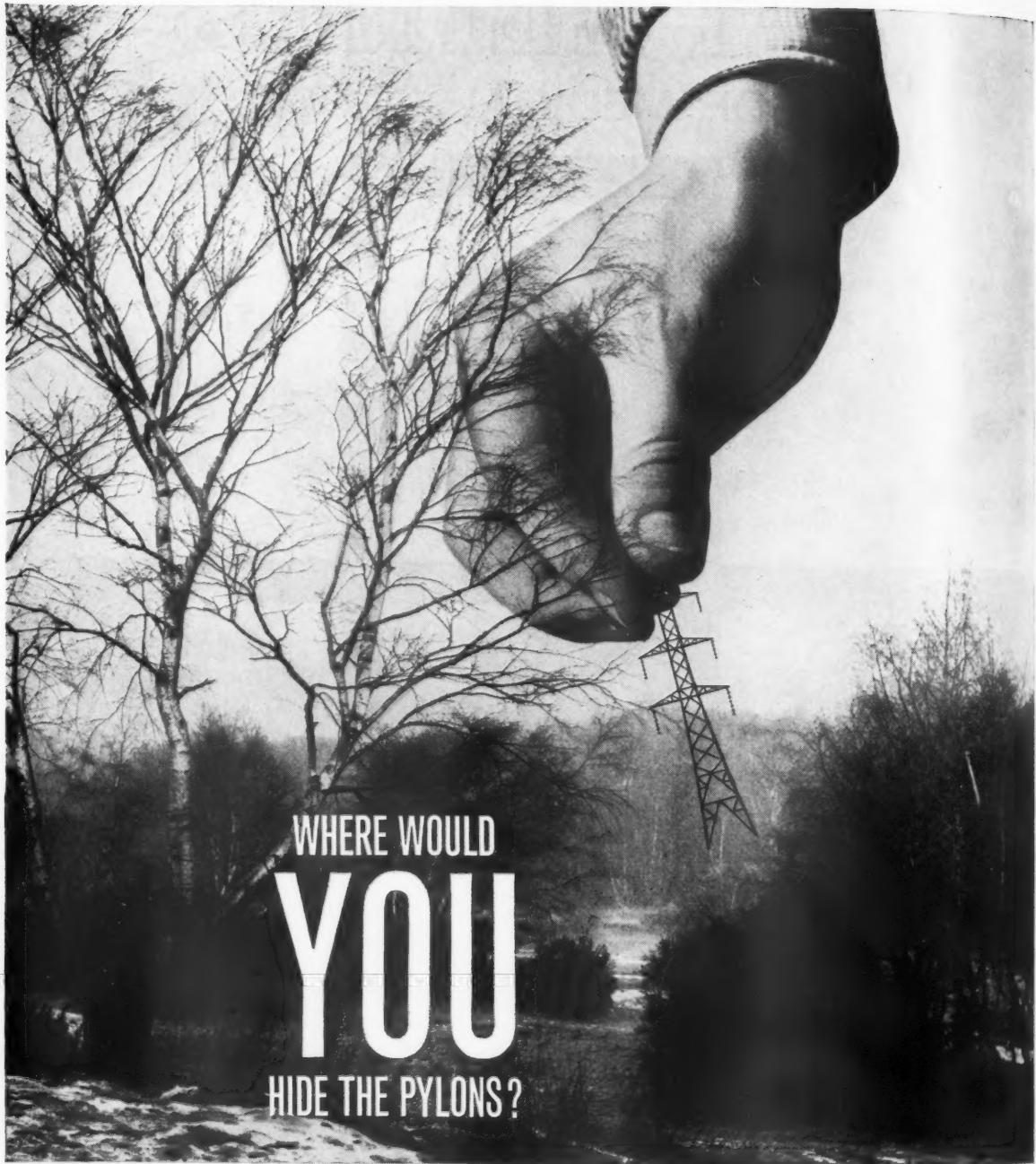


In hospitals piped supplies of medical gases are now an essential part of routine efficiency. They enable medical gases to be used immediately in wards, operating theatres and any other part of the hospital, without transporting cylinders from place to place. Increased safety and lower gas costs are additional advantages of installing pipelines. We shall be glad to let you have details of their design and installation. Just ask us.

BRITISH OXYGEN IN THE SERVICE OF MEDICINE

THE BRITISH OXYGEN COMPANY LIMITED, MEDICAL DEPARTMENT,
SPENCER HOUSE, 27 ST. JAMES'S PLACE, LONDON S.W.1





WHERE WOULD
YOU
HIDE THE PYLONS?

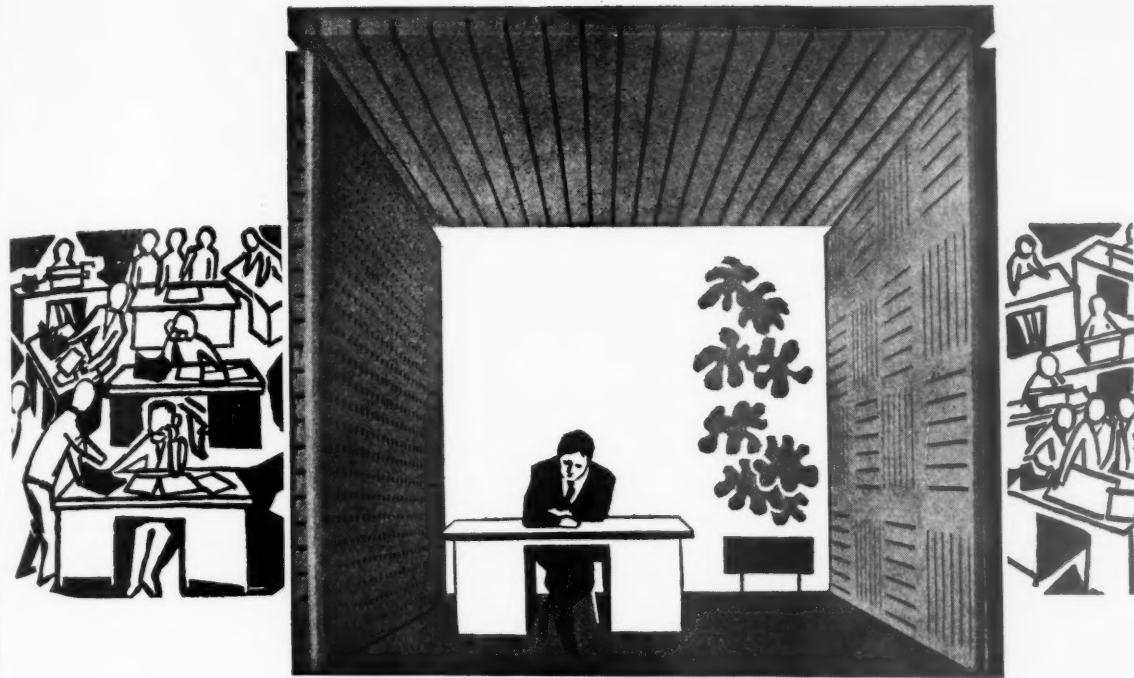
Not even trees can hide the pylons completely . . . but pylons there must be if people want the amenities that depend on electrical power. Over the next ten years Britain's power demands will double—and that means more overhead lines.

But although pylons can't be made invisible, power lines can be planned to follow the least conspicuous route, to take advantage of natural screens such as

woods and hills, and only break cover when unavoidable. This kind of careful planning, which is going on all over the country today, is in the hands of the Central Electricity Generating Board, which is charged by Act of Parliament to provide an efficient and economical power supply to the nation, while doing everything possible to preserve the natural beauties of the countryside.

THE CENTRAL ELECTRICITY GENERATING BOARD





Quiet-please!

To ease the ear and please the eye

USE TREETEX FOR EFFICIENT SOUND ABSORPTION!

There are **Nine types**



TREETAC

16" x 16"



TREETAC

24" x 24"



DECORAC

16" x 16"

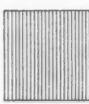


DECORAC

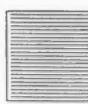
24" x 24"



TREERAC



SLOTAC



MARGINED

SLOTAC



M. C. S.

SLOTAC



PERFOTEX

Ask for details of this versatile range of acoustic tiles and sheets

SHEET SIZES 4' x 8'

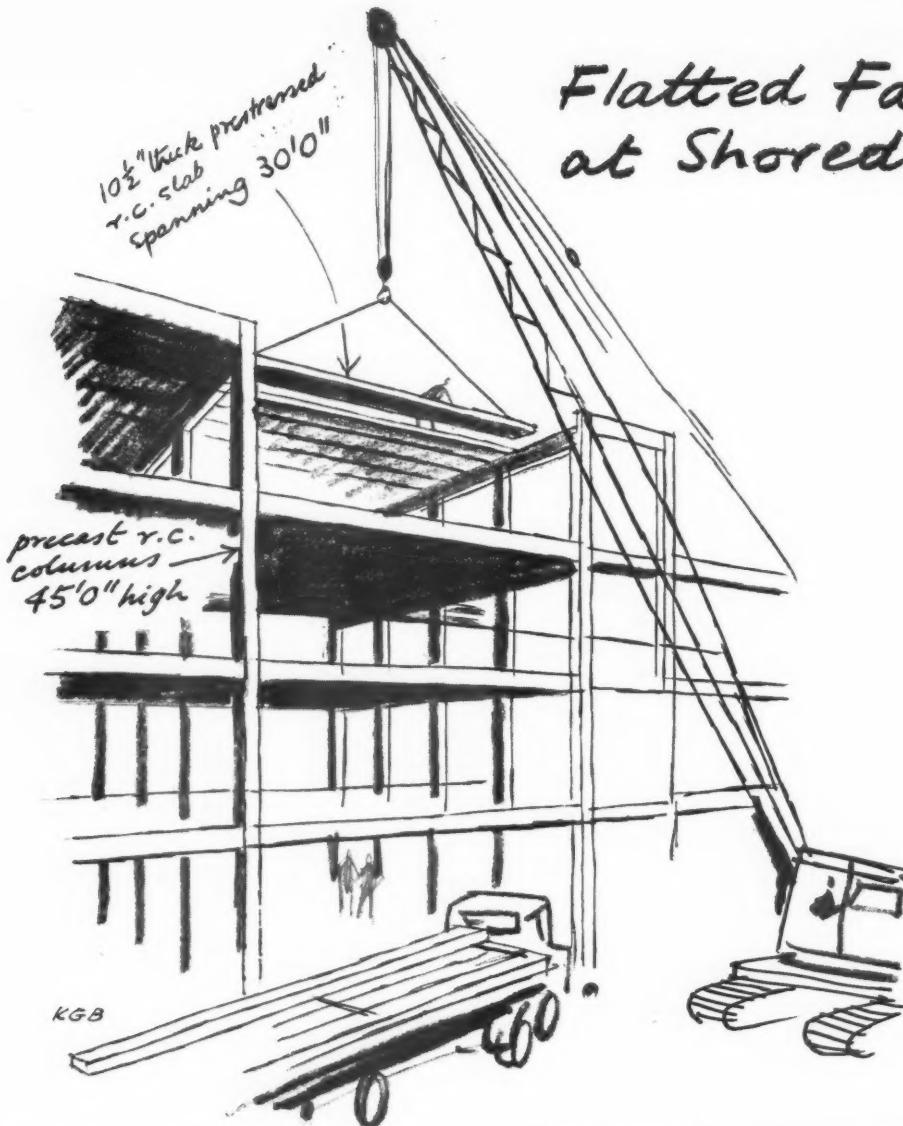


ACOUSTICS LIMITED

PERMANENT EXHIBITORS AT
THE BUILDING CENTRES
IN LONDON & MANCHESTER

8, GUILFORD STREET, LONDON, W.C.1
Telephone: CHAncery, 7387 & 5919

Flatted Factories at Shoreditch



designed: by the L.C.C. architects' dept.

purpose: workshops to house small firms carrying on light industries in the East End such as cabinet making, leather goods, tailoring, light engineering. The first of a series to be built in the course of redeveloping the area. The accommodation had to be adaptable to a wide variety of trades and provide a range of different floor areas.

structure: entirely precast concrete. The workshop blocks are each 40 ft deep with precast floor spanning 30 ft longitudinally; thus each unit has been kept free of internal columns. Structure exposed externally and finished with black rubberized paint. Infilling panels of white sandlime bricks. Columns 12" square and approx 45 ft high were made and delivered complete. Prestressed precast units 10 1/2" deep, span 30 ft between the beams.

The scheme consists of 3 blocks providing a total of 56 workshop units of 1,200 sq. ft which may be divided or combined in various ways to give a range of workshop sizes from 300 sq. ft to 2,400 sq. ft.

General Contractors: W. J. Marston & Son



CONCRETE LIMITED LONDON · BIRMINGHAM · LEEDS · GLASGOW

ELCO PLASTICS LTD

for
illuminated
ceilings

'Elcopolas' louvres
installed at
BERKERTEX

Berkertex London Fashion Centre, 309, Oxford
Street, London, W.1.

Architect:—
Office: W. H. Marmorek, Dr. Eng., FRIBA.
Shop: The late Mr. Bronek Katz, MBE, Dipl. Ing. Arch.
FSIA, of Bronek Katz and R. Vaughan.

ELCO PLASTICS LIMITED

Desborough Park Road, High Wycombe,
Bucks. Tele: 4111



new buildings - new needs and new ranges of Crittall aluminium windows, designed to match the most forward-looking architectural concepts and to meet the toughest practical demands.

Thorough research, advanced design and manufacturing techniques, a new factory specialising in aluminium windows and equipped with the most up-to-date anodizing plant—these, allied to Crittall's long experience, help to make tomorrow's buildings better to live in and work in, less costly to maintain.

The new building for The Life Insurance Corporation of India, Madras, fitted with Crittall aluminium windows with pressed aluminium surrounds. Architects: H. J. Brown & L. C. Moulin, A.R.I.B.A. London & Madras Consulting Engineers: T. C. Durley, B.A., A.M.I.C.E. of Durley, Hill & Partners, in association with Loadsman & Butlers. Contractors: The Coromandel Engineering Co. of Madras.

and
WINDOWS
by
CRITTALL

Write for leaflet 244B
THE CRITTALL MANUFACTURING CO LTD
BRAINTREE - ESSEX · Branches and
depots throughout the country



Whe

The YA

12,000 DIFFERENT LOCKS



MORE SECURITY—MORE FLEXIBILITY WITH YALE MASTER KEYED SUITES

There's practically no limit to the number of combinations obtainable with Yale Master Keyed Suites. Yale master keying, which can be arranged to include cylinder, rim and mortice locks, latches, deadlocks, padlocks and cabinet locks, provides a new degree of security and control in office blocks, factories, schools, hospitals, flats, hotels and all other types of public buildings.

MASTER KEYED SUITES

Different locks each operated by its own key, but with a master to open all.

GRAND MASTER KEYED SUITES

Different locks divided into Sub-master Suites. Each Sub-master key operating all the locks in its suite, but not those in other suites. The Grand Master key will open all—up to 12,000 different locks!

LITERATURE

Explanatory leaflets and detailed specifications will gladly be sent on request.

**Where there's a door
—there's a need for**



The YALE & TOWNE Manufacturing Company • Lock and Hardware Division • Dept. N1 • Willenhall • Staffs

Corrugated
'Perspex' rooflights
have I.C.I.
behind them and
a long life ahead

WHEN YOU FIT Corrugated 'Perspex' rooflights, you can be sure you are fitting the *very best*. To begin with, Corrugated 'Perspex' is more efficient than any other rooflight because it transmits more light. With a properly planned rooflighting system Corrugated 'Perspex' will provide adequate economical lighting using only a small number of sheets. It also has the ability to keep up this efficiency over the years even in corrosive atmos-

pheres, retaining its smooth, easily cleaned surface indefinitely. In fact, in the majority of cases, Corrugated 'Perspex' rooflights should last as long as the roof itself.

More than this, Corrugated 'Perspex' is unique among rooflights in being made by I.C.I. In buying it, you are not only buying the best, you are buying it from a manufacturer on whom you can rely.

Insist on **CORRUGATED 'PERSPEX'**

'Perspex' is the registered trade mark for the acrylic sheet manufactured by I.C.I.

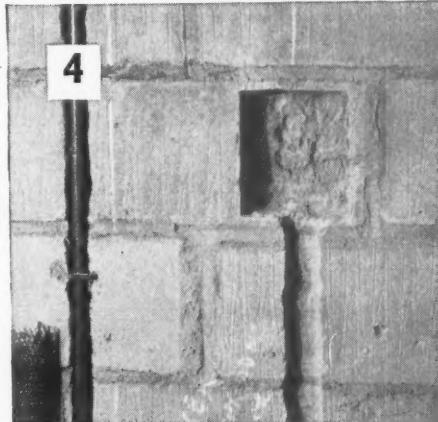
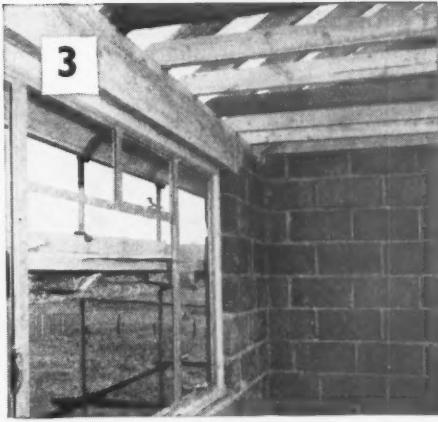
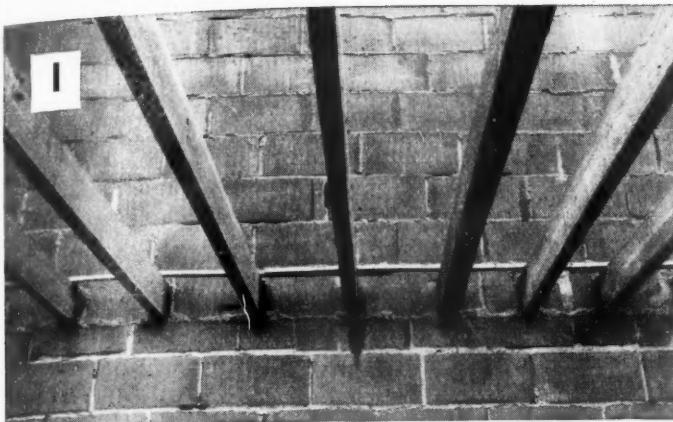
IMPERIAL CHEMICAL INDUSTRIES LIMITED • LONDON • S.W.I
CP 170



The
a two f
built. T
comply
provide
comple

Own
with w
overall
for each

P
1. D
2. C
ty
3. M
st
4. T
B
5. N
an
3
B
6. F
p
F
U



Practical structural insulation with

THERMALITE

Loadbearing insulating building blocks

Load Bearing: Inner Leaf.

1 Here 4" Thermalite blocks are shown carrying the first floor joists. The inner leaf above the joists is continued in 3" Thermalite.

Load Bearing: Eaves Level.

3 This internal view shows the 6" Thermalite solid wall carrying lintel, roof plate and roofing members.

Load Bearing: Front Face:

2 This 6" Thermalite solid wall provides simple direct fixing without battens. The wall when tile-hung will have a 'U' value of .16 B.T.U.'s. The end wall shown is in cavity construction using 3" Thermalite inner and 4½" brick outer leaf with wall-ties spaced at 18" centres horizontally and vertically.

Chasing and Fixing.

4 Internal mains service arrangement and the direct, positive fixing of joinery, plumbing and etc. are greatly simplified. Thermalite will not cause corrosion of metal fixings.

For further information and samples apply to:

THERMALITE YTONG LIMITED,

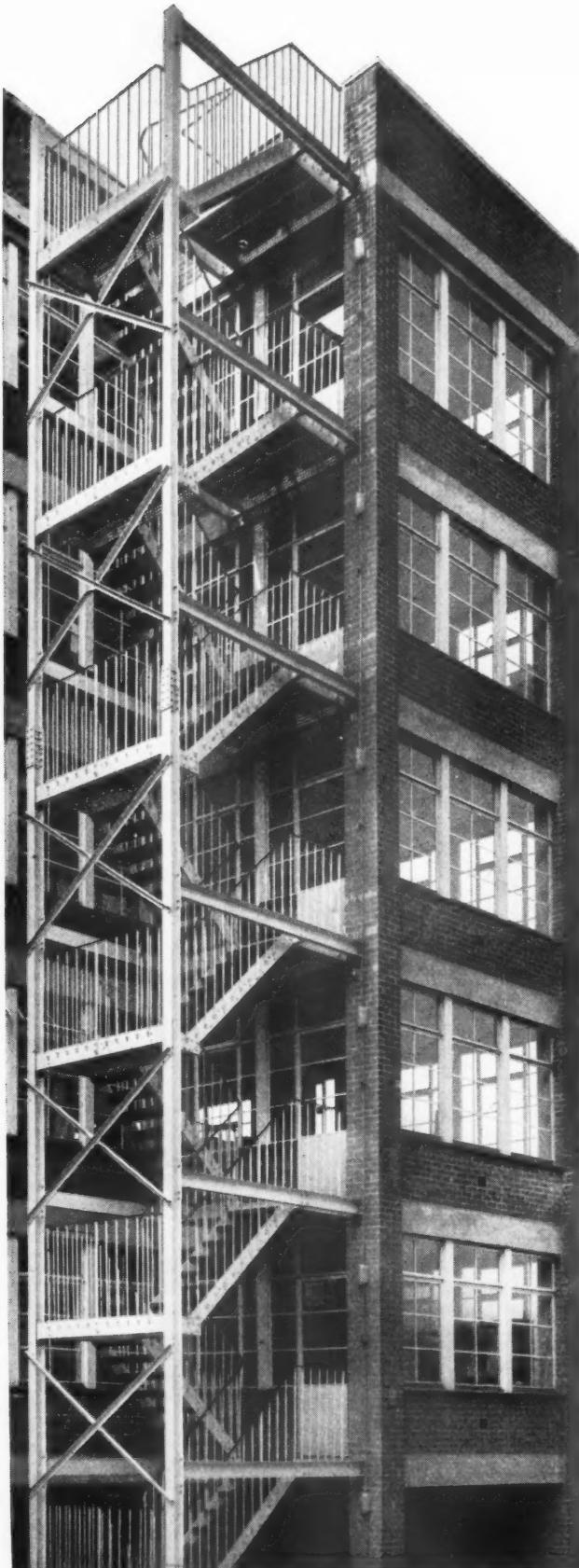
Hams Hall, Lea Marston, Sutton Coldfield, Warwickshire.

Telephone : Coleshill 2081

A LAING COMPANY

Properties of Thermalite.

1. Dry density 50 lb./ft.³
2. Compressive strength to BS:2028 type A.
3. Moisture movement/drying shrinkage to BS:2028 type B.
4. Thermal conductivity (k) 1.4 B.T.U.'s, etc.
5. Nominal face size 18" x 9" or 9½", actual sizes 17½" x 8½" or 9½" x 2½", 3", 4", 5", 6" and 8½" (tolerance to BS:2028).
6. Fire resistance 4" loadbearing plastered hot face—2 hour grade. Fire resistance 4" non-loadbearing unplastered—4 hour grade.



Haywards metal staircases

Haywards Fire Escape Staircases were supplied and fixed on this new building for Longleys and Hoffman, Birmingham.

Haywards staircases are constructed of suitable rolled steel sections with cast iron treads and landings of non-slip pattern to ensure minimum obstruction of light and adequate stability.

HAYWARDS HAVE SUPPLIED THE BUILDING TRADE FOR OVER 150 YEARS.

Architects: C. F. Lawley Harrod, F.I.A.A., A.M.I.Struct.E.

Contractors: Messrs. C. Green & Sons Ltd., Birmingham.

HAYWARDS LTD

HAYWARDS LIMITED
UNION STREET LONDON S.E.1

Telephone: Waterloo 6035 (Private Branch Exchange)
Grams: Haywards Bros. Sedist London

TO-DAY'S FIRST ESSENTIAL SERVICE

- SOIL BORING INVESTIGATIONS AND TESTING
- BORED PILING FOR FOUNDATIONS
- FOUNDATION ENGINEERING
- MATERIALS AND STRUCTURAL TESTING
- OTHER SPECIALIST KEY SERVICES PROVIDED

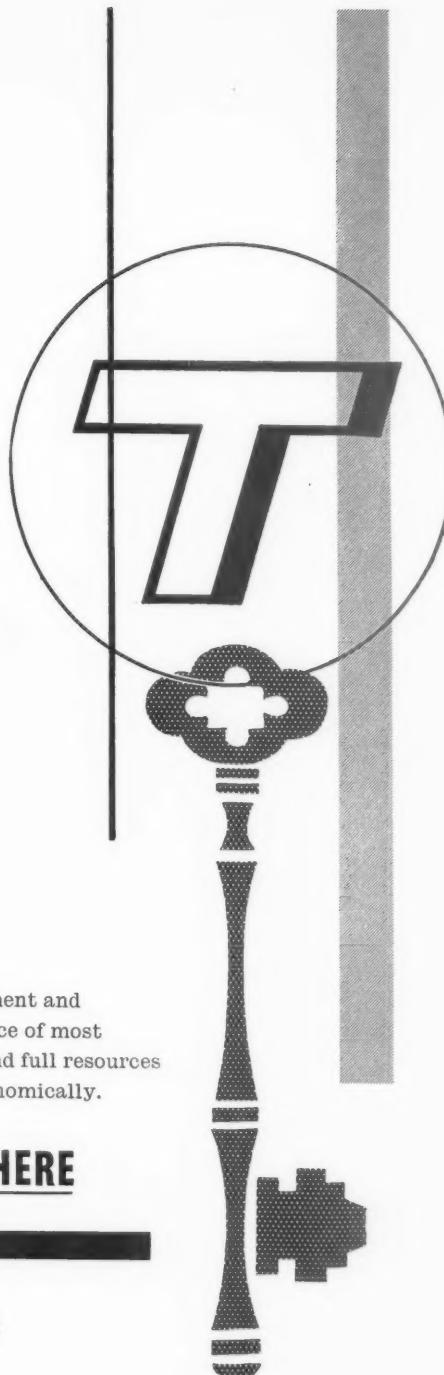
THE KEY TO SURE FOUNDATIONS AND BUILDING

The need for our proved specialist services continue to become more widely appreciated and used by the largest to smallest of our clients, who include:—

ARCHITECTS
PUBLIC AUTHORITIES AND UTILITIES
INDUSTRIALISTS AND DEVELOPERS
CONSULTANT CIVIL AND STRUCTURAL ENGINEERS
CIVIL ENGINEERING CONTRACTORS AND BUILDERS

FOR EVERY TYPE OF PROJECT

Every job receives the personal attention of our Management and Specialist Engineers, who have a most extensive experience of most branches and aspects of Civil Engineering and Building and full resources for carrying out the work, thoroughly, efficiently and economically.



AND OUR SERVICE OPERATES EVERYWHERE

WRITE TO US FOR OUR BROCHURE:

Terresearch **LIMITED**

BUILDING AND CIVIL ENGINEERING LABORATORY
PILING AND FOUNDATION ENGINEERS AND CONTRACTORS

RUISLIP ROAD · NORTHLAND · GREENFORD · MIDDLESEX · Telephone: VIKING 4306

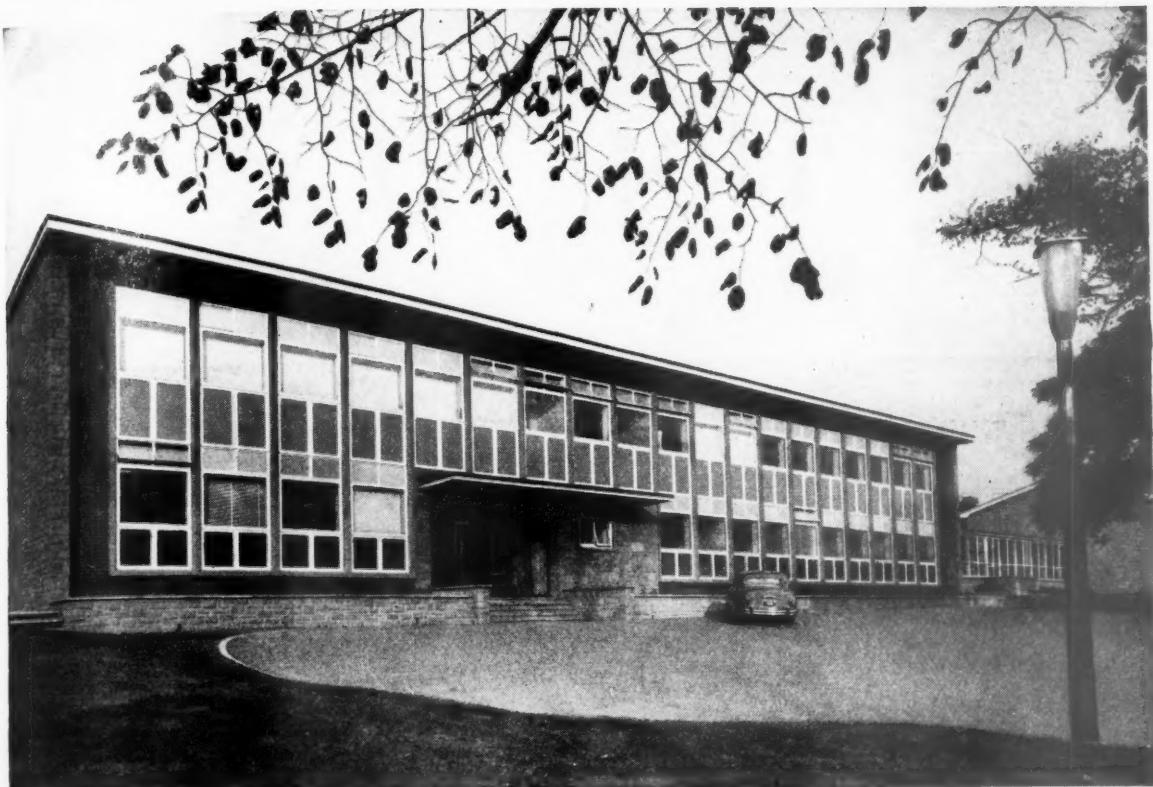
When it's a question of
HIGH-CLASS
VENEERED-PANELS
call in
GLIKSTEN

Gliksten

**THE FOREMOST NAME
IN TIMBER**

GLIKSTEN VENEERS LTD.
Liverpool Office: 87, Lord Street, Tel.: Central 7576

Carpenters Road, London, E.15. Tel.: AMHerst 3300
Hull Office: Victoria Dock, Citadel Street, Tel.: 31144



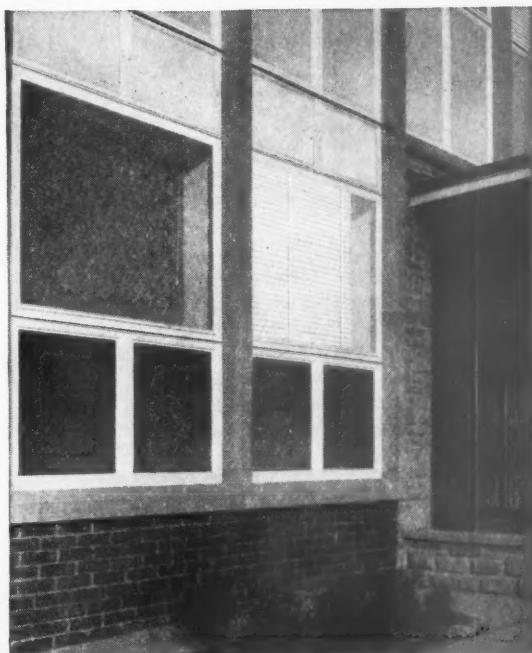
PLYGLASS makes it possible

That brilliant idea —don't discard it out of hand because it seems impractical or too costly at first sight. Look at it from the 'PLYGLASS' point of view! But what about glare and shadow, you say. And thermal and sound insulation, and even light distribution . . . STOP! Before you think of any more difficulties, think about 'PLYGLASS' double glazing units! 'PLYGLASS' double glazing units — manufactured either as Clear or Diffusing, or as coloured opaque slabs (the latter known as Vitroslab) overcome all these notorious glazing limitations and cut construction costs because they provide *double insulation in a single set of glazing bars!*

Illustrated: *Office Block for Joshua Tetley & Son Ltd., — J. Foster, L.R.I.B.A., Staff Architect, where 'PLYGLASS' Clear and Diffusing Double Glazing Units are used for windows, transomes and roof-lights and Vitroslab for the infill panels.*

For further information on

**'PLYGLASS' DOUBLE GLAZING UNITS
and VITROSLAB INFILL PANELS**

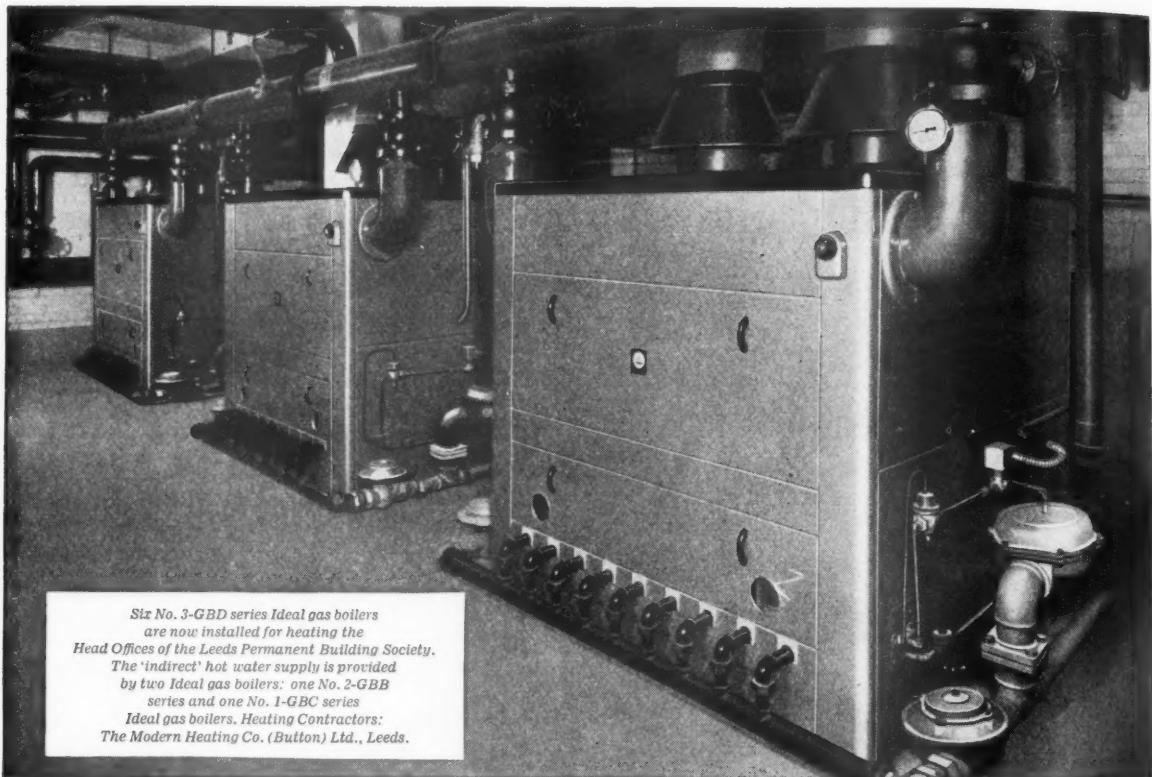


write to: **PLYGLASS LIMITED • EDINBURGH WAY • HARLOW • ESSEX**

Telephone: Harlow 24271. Cables: Plylux Harlow.

6625

TODAY'S
IDEAL
FOR CLEAN, SMOKELESS WARMTH



*Six No. 3-GBD series Ideal gas boilers
are now installed for heating the
Head Offices of the Leeds Permanent Building Society.
The 'indirect' hot water supply is provided
by two Ideal gas boilers: one No. 2-GBB
series and one No. 1-GBC series.
Ideal gas boilers. Heating Contractors:
The Modern Heating Co. (Button) Ltd., Leeds.*

Take any large modern building you like: there is an Ideal Industrial Gas Boiler to serve it. They come in 18 sizes — from 90,000 to 1,430,000 B.T.U.'s per hour. And every model is superbly efficient, clean and trouble-free.

Where fuel storage is a real problem, Ideal Industrial

Gas Boilers are the obvious ideal! They give a controlled temperature for heating and hot water, need only the minimum attention and maintenance and, because they produce no smoke or waste gases to cause atmospheric pollution, are particularly suitable in smokeless zones.

Ideal INDUSTRIAL Gas Boilers

For full details please write to

IDEAL BOILERS & RADIATORS LTD · IDEAL HOUSE · GREAT MARLBOROUGH STREET · LONDON W1 · Telephone GERrard 8686

IDEAL-Standard BRITAIN'S LEADING MANUFACTURERS OF DOMESTIC HEATING EQUIPMENT





BROLAC

Brolac P.E.P.

The 'GO-ANYWHERE' Emulsion Paint.

In the past year Brolac P.E.P. has become Britain's most successful emulsion paint. This is because it is unique both in formulation and performance. Based on an exclusive Vinyl Co-Polymer, Brolac P.E.P. has remarkable powers of adhesion. It can be used on any sound surface and resists the toughest conditions—even in kitchens and bathrooms and out of doors. Other important advantages of Brolac P.E.P. are that it requires less preparation work—and it dries in only 1–2 hours. These two characteristics naturally mean big savings in time and

labour. It also contains two powerful mould and bacteria-resisting agents. Brolac P.E.P. has been subjected to rigorous tests and has proved itself in demonstrations to trade user audiences all over the country.

Brolac Gloss Enamel

The gloss that keeps its good looks longer!

Brolac Gloss Enamel is an alkyd paint film doubly reinforced by hard resin and heat-toughened oils. It provides a durable, high gloss finish for all interior and exterior work. Hard, yet flexible and tough, it resists the severest treatment and the effects of salt water and corrosive atmospheres. Under the most

testing conditions Brolac Gloss keeps its good looks longer.

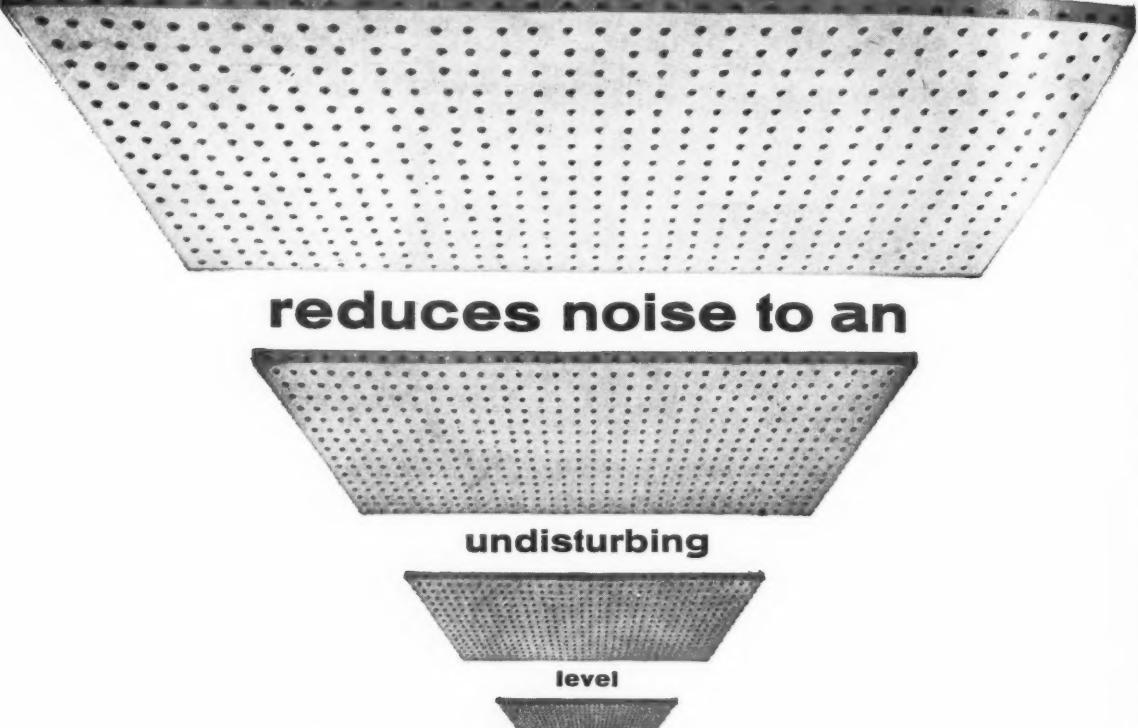
Technical and Colour Service

The first class choice of colours available in all Brolac finishes includes the approved British Standard Colour Range and is now further extended by the Brolac Colorvogue special 100 Fashion Shades.

You are invited to refer colour and specification problems to the John Hall Technical and Colour Advisory Bureau at Bristol—whose colour schemes have a high rate of acceptance from specifying authorities.

John Hall & Sons (Bristol & London) Ltd., Hengrove, Bristol, 4. 1-5 St. Pancras Way, N.W.1. 26, Park Row, Leeds, 1

PAXBOARD



reduces noise to an

undisturbing

level

Newalls (Reg'd Brand) PAXBOARD presents the architect with a first-class medium for large-area acoustic insulation.

The modern tendency to use large rooms in office blocks results in an artificially increased noise level due to numbers of people working together, and makes acoustic treatment more essential than it would otherwise be. Similarly in factories, the provision of a sound-absorbent ceiling which reduces noise, and simultaneously insulates heat more effectively than any building board, is an attractive proposition, particularly in view of the reasonable cost for an all-asbestos product.

PAXBOARD has been produced especially for this class of work.

It is $\frac{1}{2}$ " in thickness and available in sizes up to 6' 0" x 3' 0", has a very good efficiency (50% absorption coefficient at 500 c.p.s.—75% at 2,000 c.p.s.), is not affected by repeated decoration and, being composed entirely of asbestos, is absolutely *fire-proof* and is rot-proof and vermin-proof.

PAXBOARD weighs less than 1-lb./sq. ft. and the larger than normal acoustic board size renders erection cheaper and more convenient.

With all these practical attributes it is small wonder that PAXBOARD is firmly established as the architect's first choice for large-area acoustic insulation.

Full technical information available on request.

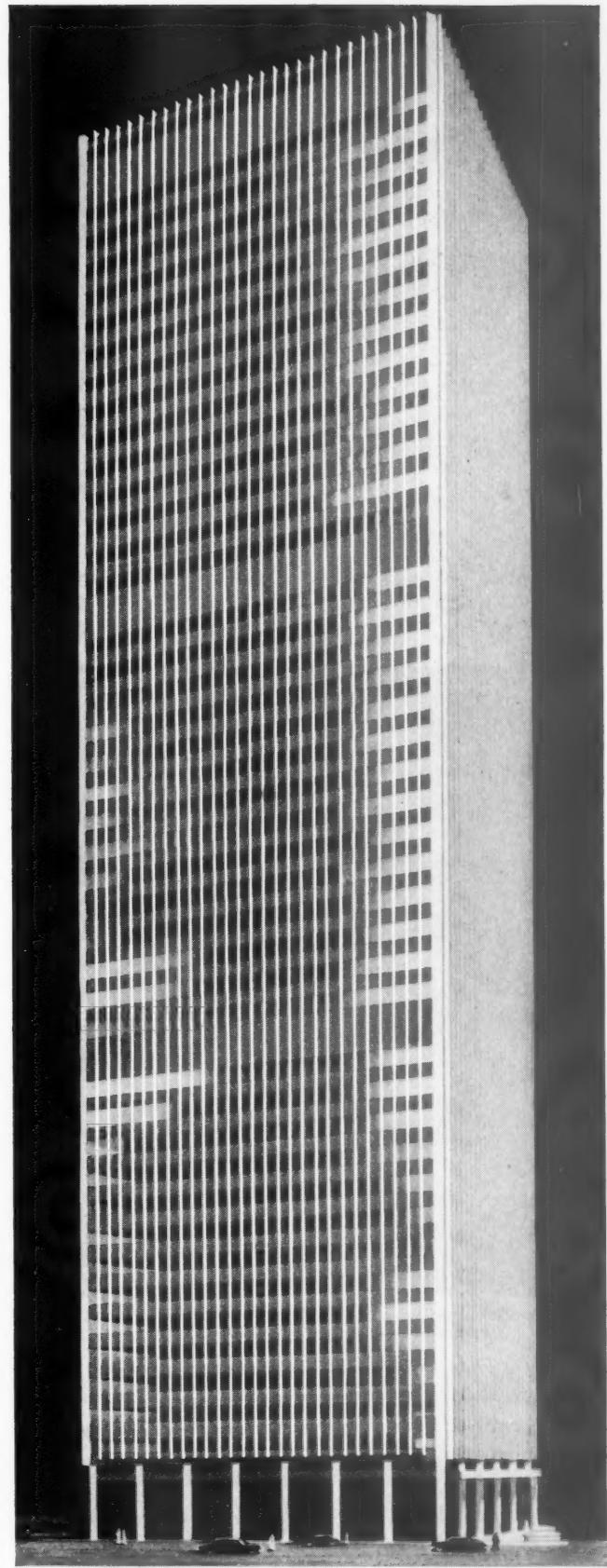
Newalls PAXBOARD
NEWALLS INSULATION CO. LTD. Head Office: WASHINGTON, CO. DURHAM

A member of the Turner & Newall Organisation

Offices & Depots at: LONDON, GLASGOW, MANCHESTER, NEWCASTLE UPON TYNE, BIRMINGHAM, BELFAST, DUBLIN, BRISTOL and CARDIFF

Agents and vendors in most markets abroad

world's tallest slate-faced building



BROUGHTON MOOR has started shipping 125,000 sq. ft. of Spoutcrag (Langdale Pikes) Light Sea Green, naturally riven slate—one inch nominally thick—as cladding for the 600ft. high Canadian Bank of Commerce Building, Montreal.

The vertical tendency of its intriguing bar markings gives this famous slate its particular grace. Spoutcrag Slate is intensely durable, and weathers beautifully.

Spoutcrag Slate supplied only by

Broughton Moor

GREEN SLATE QUARRIES LTD

Coniston, The Lake District, Lancashire
Tel: Coniston 225/6

Please write for technical pamphlets: Flooring, Facings
Copings, Cills, Riven Face Slabs—
or our expert advisory service.

Owners - Dorchester Commerce Realty Ltd., Montreal
Architects - Peter Dickinson, A.R.I.B.A.,
Toronto, Montreal, Ottawa and London
General Contractor - Perini Limited, Toronto
Structural Engineers - M. S. Yolles Associates, Toronto
Mechanical Engineers - G. Granek Associates, Toronto
Electrical Engineers - J. Chisvin Associates, Toronto
Fins and Panels - Toronto Cast Stone Company Ltd.

Glazed Vitrified Clay Pipes

go down to serve the metropolis



*Park Lane Improvement Scheme in progress at Marble Arch.
J. Rawlinson, C.B.E., M. Eng., M.I.C.E., M.I. Mech. E., Chief Engineer, L.C.C.*

For information write to the Engineer, THE NATIONAL SALT GLAZED PIPE M

the pipe material that



never wears out

Glazed vitrified clay pipes go down to serve. Naturally they are being used for the drains and sewers in the new Park Lane Improvement Scheme, now under construction.

It is accepted amongst men responsible for city planning that there is no adequate substitute for the qualities of **glazed vitrified clay pipes**

City Engineers know that the flow of traffic must be disturbed to the minimum. They know their work will serve many generations. It must, therefore, be permanent. They use a pipe that is unaffected by anything encountered from within or without.



PIPE MANUFACTURERS' ASSOCIATION
Hanover Court, Hanover Square, LONDON W.1
Telephone: MAYfair 0364



INDUSTRIAL ENGINEERING IN TIMBER



L.C.C. Photo

Mount Furniture Co. Ltd., factory at Haverhill R.T.E. Glued Laminated Bowstring Trusses spanning 45 ft.

Architect: Hubert Bennett, Architect to the L.C.C. (F. G. West, Deputy Architect; David Jenkin, Senior Architect, General Division.) Contractors: Holmes Bros.

rte

R.T.E. Bowstring Trusses are a most economical form of roofing construction where clear spans from 45 ft. to 100 ft. are required. Roofs can be clad in any of the customary roofing materials and glazing and ventilation can be simply arranged.

R.T.E. Bowstring Trusses can be erected on timber or steel columns, brick piers or load-bearing walls to suit individual requirements. Erection is simple and requires no specialised labour.

Literature on R.T.E. Bowstring Trusses and other R.T.E. components available on request.

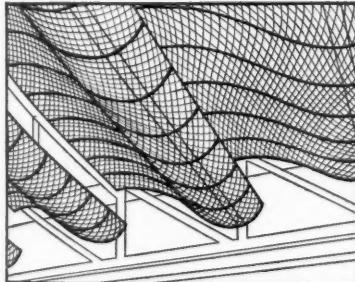
RAINHAM TIMBER ENGINEERING CO. LTD.
FERRY LANE, RAINHAM, ESSEX. TELEPHONE: RAINHAM 3311

THE EXP
Birming
Ltd., Ann



An Expanded Metal background was chosen for the intricate curves of London's Grosvenor Court Hotel restaurant ceiling.
Chartered Surveyors: Lane & Bridge.

and see how Expanded Metal translates the most complex suspended ceiling from drawing board dream into reality



Expanded Metal is infinitely versatile
Flat, domed, arched, vaulted... whatever the form of the suspended ceiling you plan, Expanded Metal will match it... easily, accurately, beautifully and economically.



Expanded Metal is backed by a unique service When you select Expanded Metal you enjoy the service of suspended ceiling specialists who will collaborate with you in both design and construction on a fully responsible basis.



Expanded Metal is a major economy
Expanded Metal keys are permanent quality keys. With suitable plaster mixes a very high fire rating can be achieved and an exceptional degree of acoustic control attained. These benefits are additional to low initial cost.

Write today for details

EXPANDED METAL
at the heart of more things than most people realise

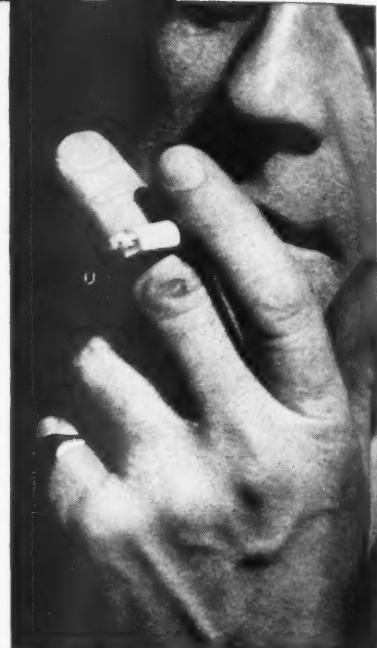
THE EXPANDED METAL COMPANY LIMITED, 16 Caxton Street, London, S.W.1. Phone: ABBey 7766 Also at: Aberdeen • Belfast
Birmingham • Cardiff • Dublin • Exeter • Glasgow • Leeds • Manchester • West Hartlepool • The Expanded Metal Company of Canada
Ltd., Annacis Industrial Estate, Vancouver, Canada.





Who started all* this anyway

The Ruberoid Company pioneered the use of Metal Deck Roofing. They still understand it best, and today still lead in design. The Ruberoid Contract Division will lay a reliable roof in record time, with a wide choice of steel or aluminium deck units, insulation and weather-proofing, at a highly competitive price.



*RUBEROID: METAL DECK ROOFING

Full technical information available. Write or telephone

THE RUBEROID COMPANY LIMITED 46 DA COMMONWEALTH HOUSE, 1-19 NEW OXFORD STREET, LONDON, W.C.1. HOLBORN 9501 (5 LINES)

For top quality and 10% saving

MAC FISHERIES specify *Merthyrware*



Mac Fisheries Ltd. have found that Merthyrware Tiles provide the right kind of flooring to stand up to heavy traffic. The shale from which Merthyrware Tiles are made is the finest in the country and because our factory is situated on the site of this raw material, we can produce a tile of superior quality at a more economical price.



MERTHYRWARE

Modern Ceramic Floor Tiles

These hardwearing, real ceramic tiles are unbeatable for their long-lasting qualities and consistent size and colour. Merthyrware Tiles are produced in one of the most modern, best-equipped factories in the country. They are universally accepted, and are particularly suitable for use in shops, offices, factories, schools and municipal buildings everywhere.

SPECIFY MERTHYRWARE FOR:—

SUPERIOR STRENGTH—up to 10 tons per sq. inch.

CLEAR, FAULTLESS COLOURS—Red and Mingles.

STANDARD SHAPE AND CONSISTENT SIZE.

RESISTANCE to heat, moisture absorption, acids, grease and fire.

REAL ECONOMY—Merthyrware cost less than any comparable tiles!

Outstanding for accurate size and consistent colour.

CERAMIC CILL TILES—Fit ALL cills.

MERTHYRWARE TILES *'never wear out!'*

SWIFT DELIVERY—24 HOUR SERVICE—WRITE OR 'PHONE

MERTHYRWARE LTD. CARKER'S LANE, LONDON, N.W.5. TELEPHONE: GULLIVER 8761 (10 LINES)

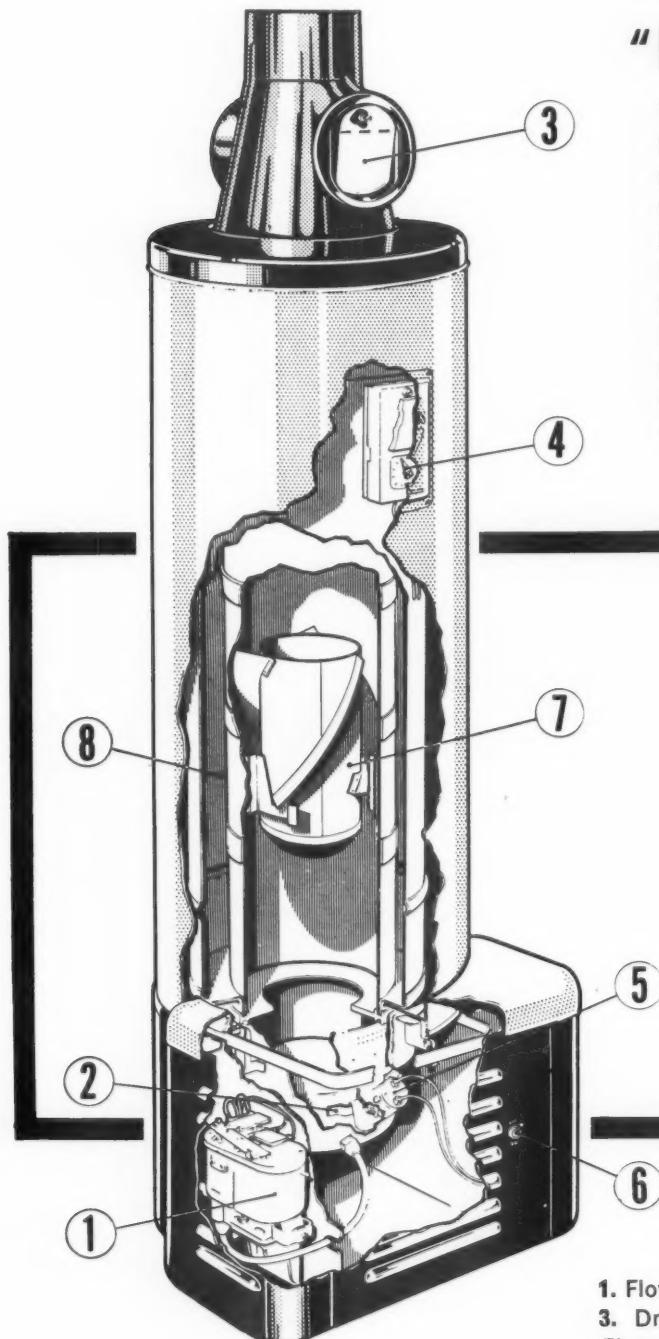
FACTORY: HEOLGERRIG, MERTHYR TYDFIL, GLAMORGAN. TELEPHONE: MERTHYR TYDFIL 2793

ESI

*The fully automatic oil-fired
boiler for the smaller house*

SMITHS

"MODEL 30"



This excellently designed boiler (at the very moderate retail price of £75) brings fully automatic background heating and domestic hot water within reach of the small-home owner. It has a high thermal efficiency, is economical to run, needs servicing only once a year, and (where it will aid economy) can be controlled by a time-switch.

Extensively tested before being put on the market, this boiler has given most satisfactory service in homes all over the country.

SUMMARY OF TECHNICAL DATA

The natural-draught vaporizing burner is fitted with electric ignition, and operates high-fire and off. 200-250 volts AC only.

Nominal output is 30,000 B.Th.U/hr, feeding radiators totalling 160 sq. ft surface area, or 110 sq. ft radiators combined with hot-water supply.

Recommended cylinder capacity 25 to 40 gallons.

Measurements: 56 $\frac{1}{2}$ " high x 20 $\frac{1}{4}$ " wide x 18 $\frac{1}{2}$ " deep.

Weight: 93 lbs.

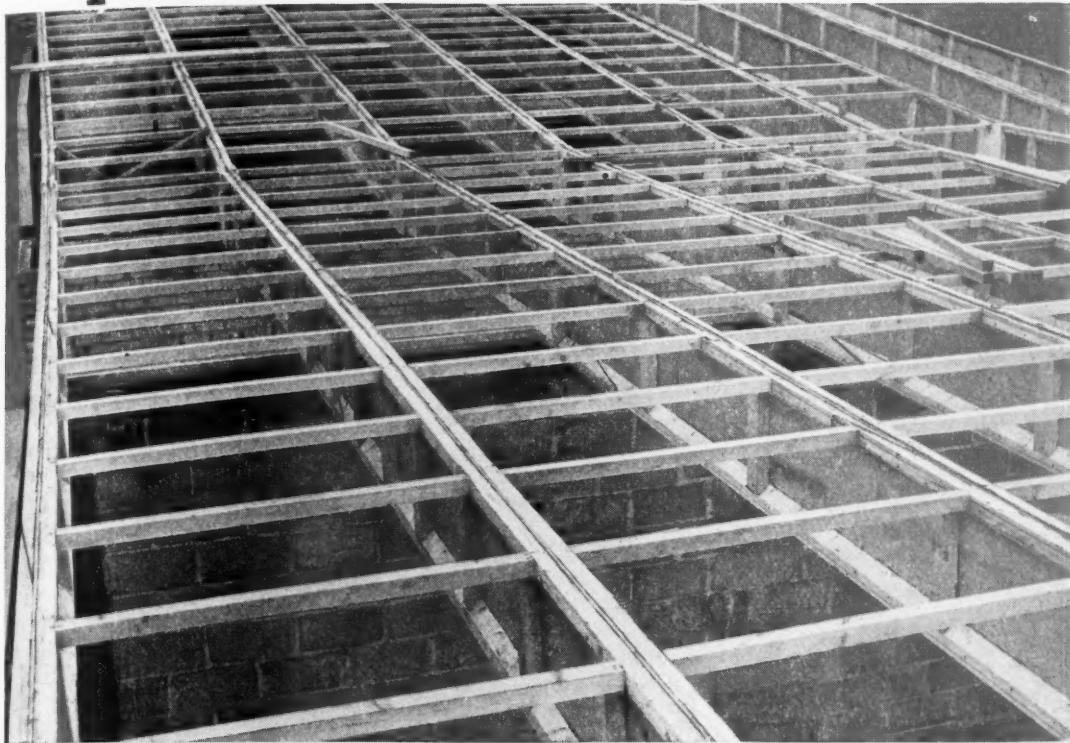
Flue draught required: .06 w.g.

Fuel: regular grade kerosene.

1. Flow Control Valve
2. Vaporizing Pot Burner
3. Draught Stabilizer
4. Water Temperature Thermostat
5. Igniter
6. On/Off Switch
7. Baffle
8. Heat Exchanger

Enquiries to : S. SMITH & SONS (ENGLAND) LIMITED, WITNEY, OXON. Telephone : WITNEY 678

How to get a better roof with Tecton Beams— quicker, easier, cheaper



Hackney Occupation Centre, Ickburgh Rd., Hackney

Architect: Hubert Bennett, F.R.I.B.A. Architect to the Council, County Hall, E.C.1.

Contractors: Harrison and Spooner Ltd., Bristol House, 23 Holborn Viaduct, E.C.1.

4 more good reasons why you should specify Tecton Beams for flat roof construction:

1. Clear spans up to 50 ft.
2. You just pick the exact beam for your scheme.
3. You cut costs of site work with the simple, all dry construction. (A school roof of 2,000 sq. ft. was hoisted and fixed by six men in four hours—with no special equipment).
4. Tecton Beams are designed in accordance with B.S. Code of Practice CP 112. That is why Tecton Beams have already been used for schools, libraries, shops and office schemes by private architects, County Councils (including the L.C.C.) and Development Corporations.

SO TRY OUR FREE DESIGN SERVICE FOR YOUR NEXT FLAT ROOF PROJECT. There's lots more information—Tecton Noggings and Decking Units, Tecton Purlin and Eaves Beams for pitched roofs, and Curtain Wall Panels—all in the literature.

You'll want all the facts TODAY.

Tecton

PLEASE SEND data sheets for Tecton beams for flat and/or pitched roofs.

PLEASE ASK your technical representative to 'phone for an appointment.

PLEASE SUPPLY FREE quote against my drawings which I enclose—with no obligation, of course.

NAME POSITION

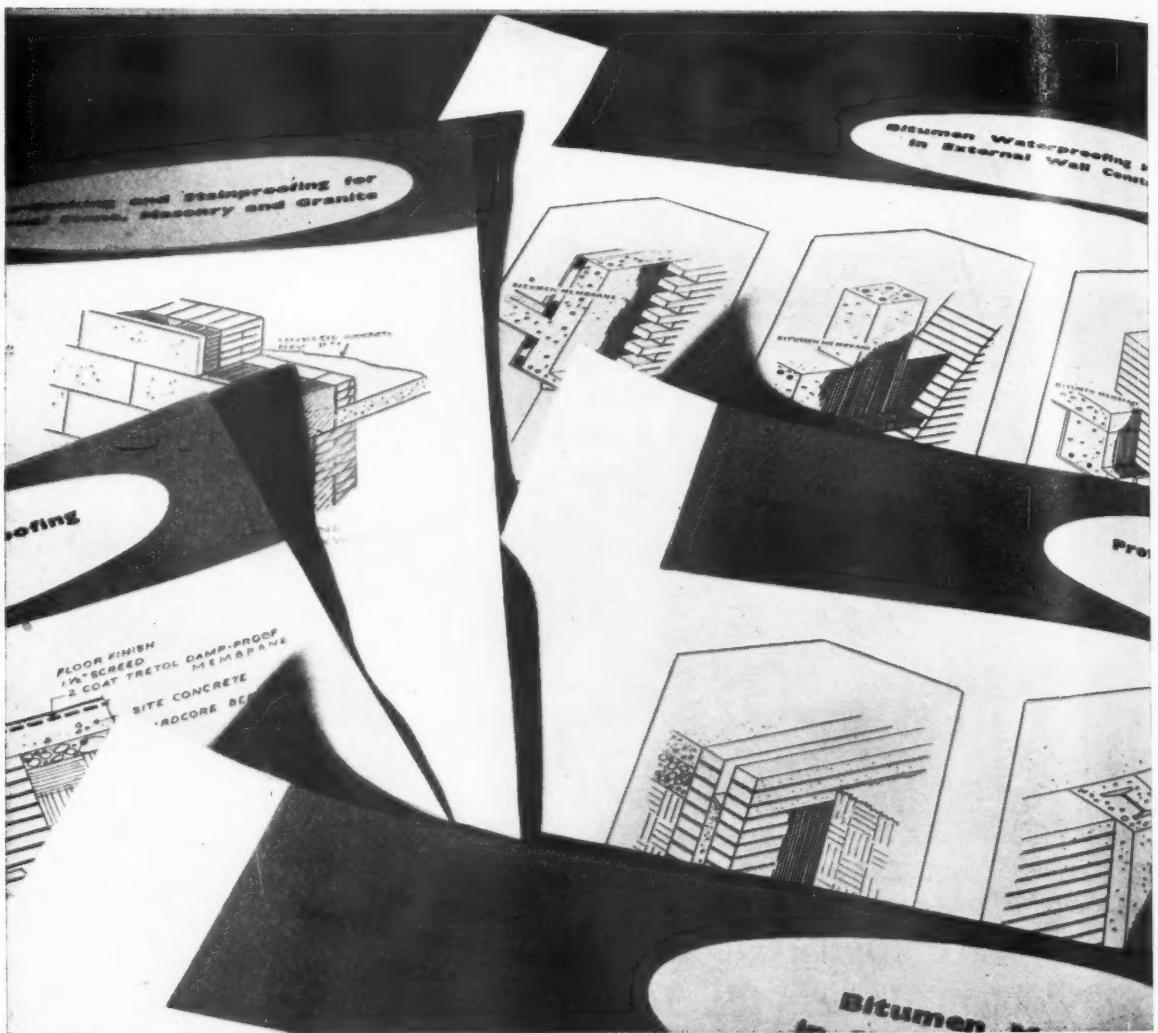
COMPANY TEL. NO.

ADDRESS

TECTON DIVISION, DEXION LIMITED, MAYGROVE ROAD
LONDON N.W.6. TELEPHONE: MAIDA VALE 6031

RIBA 5

Are these sheets in your files?



These five specification sheets deal with various aspects of waterproofing structures. They cover the use of cold-applied bitumen solutions as both horizontal and vertical damp-proof membranes. One sheet is devoted entirely to the correct application of internal waterproof renderings as an alternative to tanking. The techniques illustrated have been utilised for a number of years in many important building projects throughout the country. If these sheets are not already in your files, we shall be glad to send you a set. Filing will be no problem, since they are designed to the British Standards size for technical literature.

TRETOL

Cold-Applied Bitumen Membrane Systems

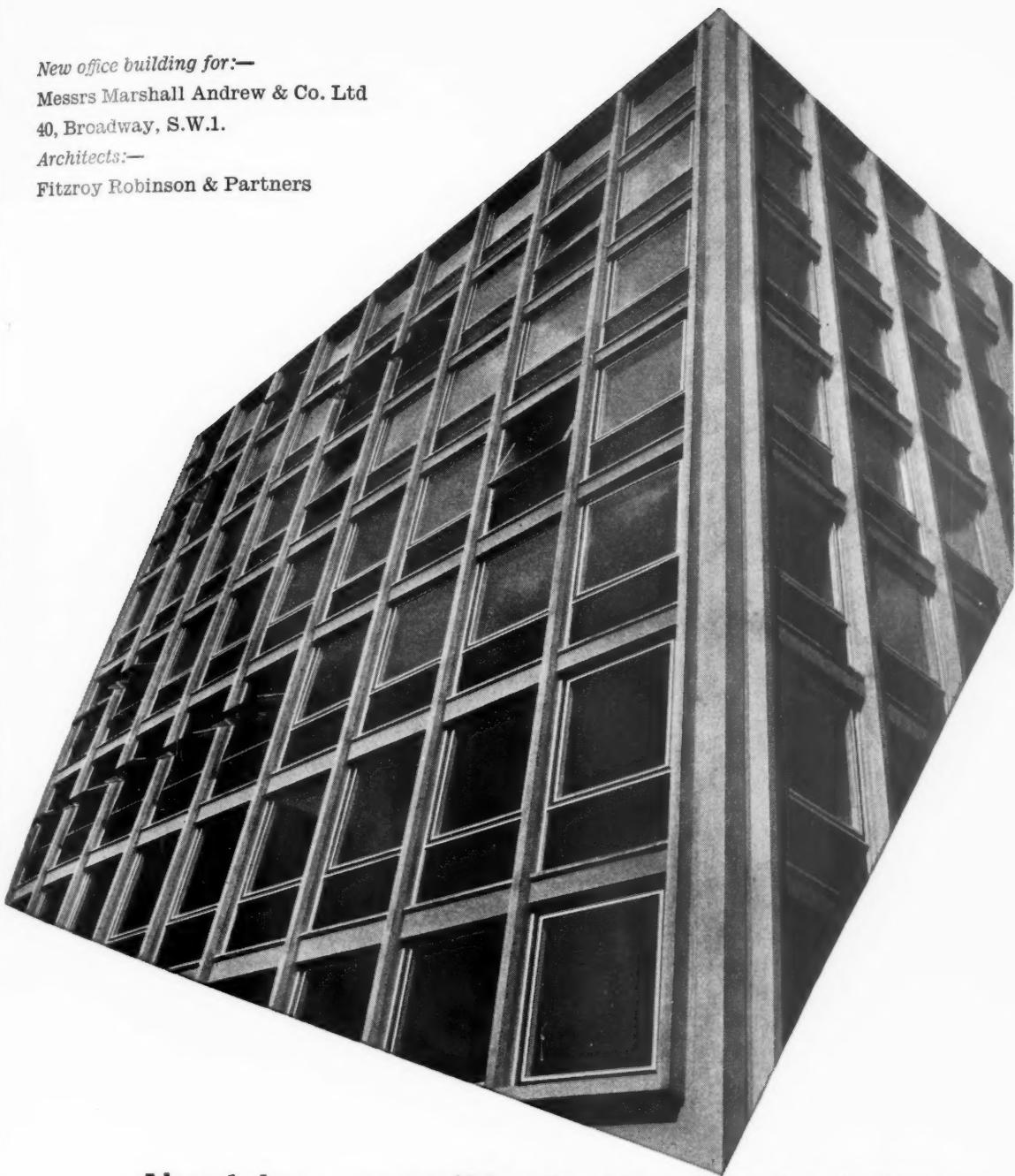
TRETOL LTD. Makers of Building Products & Paints. THE HYDE, LONDON, N.W.9. Phone: Colindale 7223

New office building for:—

Messrs Marshall Andrew & Co. Ltd
40, Broadway, S.W.1.

Architects:—

Fitzroy Robinson & Partners



Aluminium reversible double glazed windows with provision for venetian blinds

Luxfer LIMITED

WAXLOW ROAD · HARLESDEN · LONDON · N.W.10

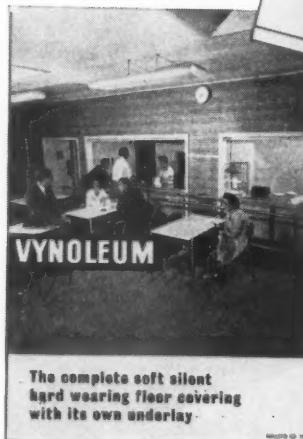
Phone:— ELGAR 7297 Grams:— LUXFER HARLES. LONDON



Manufacturers of:—
CURTAIN WALLING
METAL WINDOWS
LANTERN LIGHTS
FERRO-CONCRETE
PAVEMENT LIGHTS
BOOKSTACKS and
PARTITIONS



do you require these . . .



for your personal files?

These booklets which include specifications and details of certified tests, gladly sent on request.

Bulletin 4 ELLICEM cement paint—Water repellent—fire resistant.
 Bulletin 7 ALTRO Heavy Duty Flooring. Safety Flooring. Hardwearing, non-slip PVC Flooring.

Bulletin 9 ALTRO—Abrasive Grain, Aluminium ALTRO Safety Nosing. Prestile. Safety Treads. Long life safety on stairs and floors.

Bulletin 10 BULLDOG Floor and Ceiling Clips. Standard, Acoustic, Semi-Acoustic. Direct Fix.

Bulletin 11 COLEMANOID
Concrete waterproofing, oilproofing and hardening liquids for integral or surface use.

Bulletin 12 REDALON—Cement Retarder. For bonding cement renderings to concrete. Providing an exposed aggregate finish.

Jointing mass concrete.

Bulletin 18 VYNOLEUM

Plastic floor and stair covering with incorporated felt underlay—30 patterns. Sound deadening, hardwearing.

THE **ADAMITE**

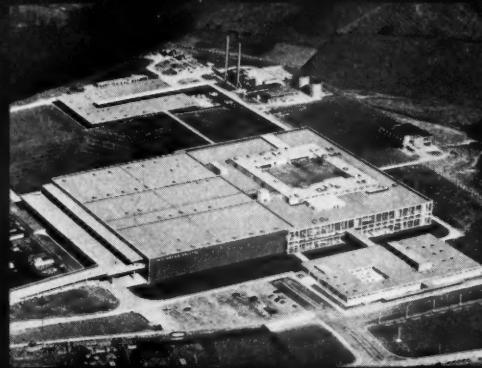
COMPANY LIMITED

HEAD OFFICE

94-98 PETTY FRANCE • LONDON S.W.1 • Telephone ABBey 5911



HIGH



WIDE
AND

ALWAYS
HANDSOME

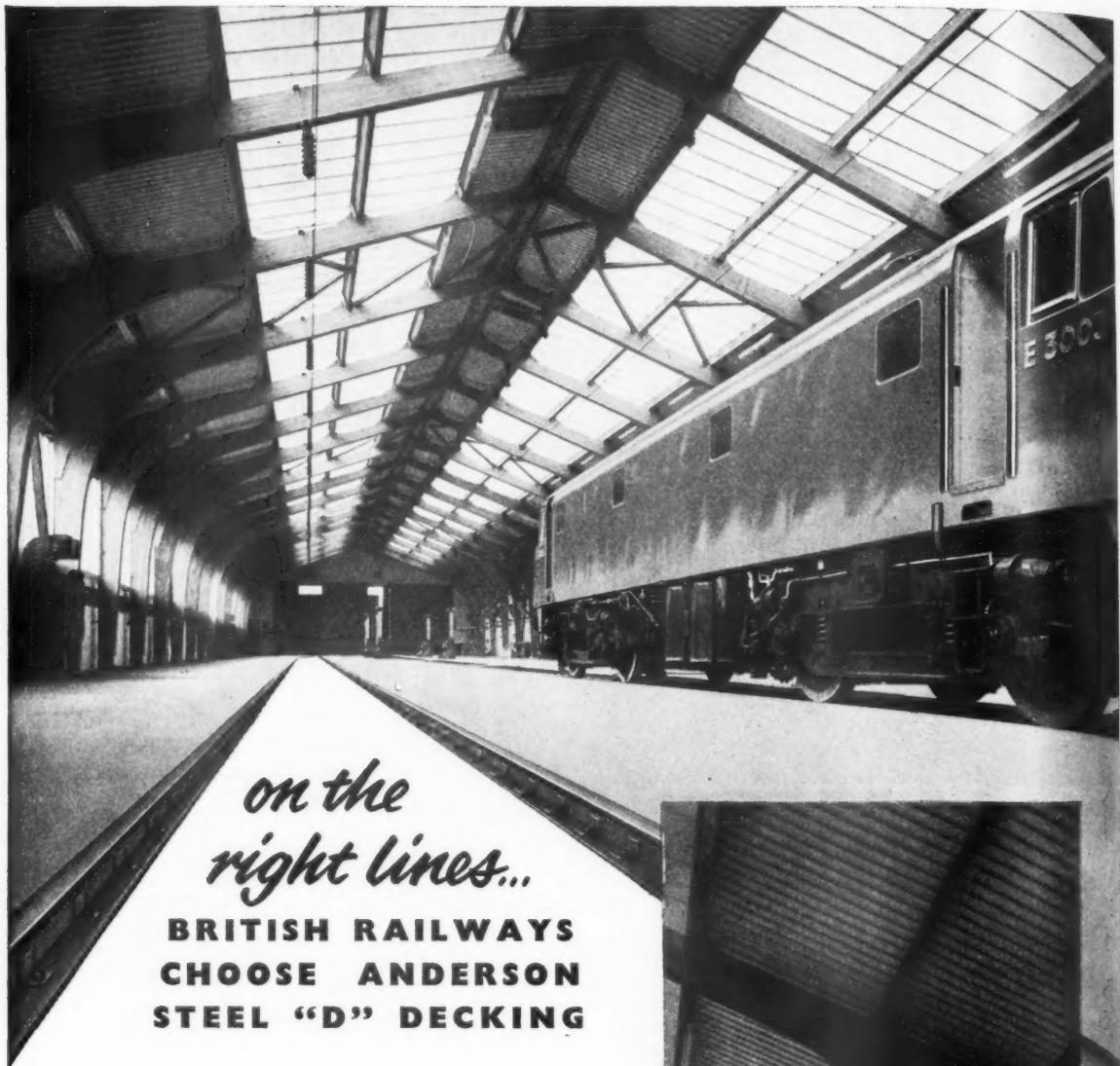


PROJECTS BY

Monk

BUILDING, CIVIL ENGINEERING AND
REINFORCED CONCRETE CONTRACTORS

A. MONK & COMPANY LTD
Warrington and London
Offices at :
Hull, Middlesbrough & Stamford



**BRITISH RAILWAYS
CHOOSE ANDERSON
STEEL "D" DECKING**

Roofing at the Longsight Electrification Depot, completed recently for British Railways as part of their modernisation scheme, was Anderson Steel "D" Decking — a strong galvanised steel deck insulated and covered with a durable weatherproofing.



Contractors: Charles R. Price
Laminated timber: Kingston (Architectural Craftsmen) Limited



D. ANDERSON & SON LIMITED

STRETFO RD MANCHESTER TELEPHONE: LONGFORD 4444
OLD FORD LONDON E3 TELEPHONE: AMHERST 9381

Heating Services Rendered...

(What could be simpler!)



The Romans showed how to cope with the British climate by introducing their effective, if hazardous, method of floor warming. Since then it has taken a long time to supersede their idea of using external heat with its problems of fuel supply and waste disposal.

Today, Pyrotex Warming Cable provides the 20th Century approach to space heating with a built-in, completely invisible system. Pyrotex Warming Cable is equally suitable for floor warming—using cheap overnight electricity, or for walls and ceilings where heat is required within minutes. With either method the virtues of Pyrotex are identical—easy to install, less costly to do so and, once in position, provide a trouble-free life equal to that of the building. Pyrotex Warming Cables are supplied direct to electrical contractors to whom a technical advisory service is freely available.

Pyrotex
REGD TRADE NAME

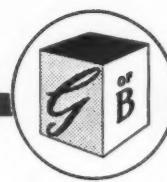
WARMING CABLES

The use of the trade name "Pyrotex" is exclusive to the products of this company and its associates.

PYROTEX LIMITED

LONDON: Victoria 3745 · BIRMINGHAM: Midland 1265 · MANCHESTER: Deansgate 3346/7 · LEEDS: 27826 · NOTTINGHAM: 83805 · GLASGOW: City 3641/2 · CARDIFF: 23689
GD 350

HEBBURN-ON-TYNE · Tel: Hebburn 83-2244/8



ARCHITECTURAL METALWORK BY
GARDINER
OF BRISTOL



Snakes Head Balustrading with anodised hand rail designed by Mark Hartland Thomas Esq., O.B.E., M.A., F.R.I.B.A., M.S.I.A.

Our Technical Advisory Department is always available, write, phone or call:

Gardiner, Sons & Co. Ltd., Box No. 140, Broad Plain, Bristol 2 and 8 William IV Street, Strand, London W.C.2

'School's a real pleasure . . .'



with

'WINDOWALL' CURTAIN WALLING

The post-war years have brought a revolution in building and nowhere is it more apparent than in the framed building of schools.

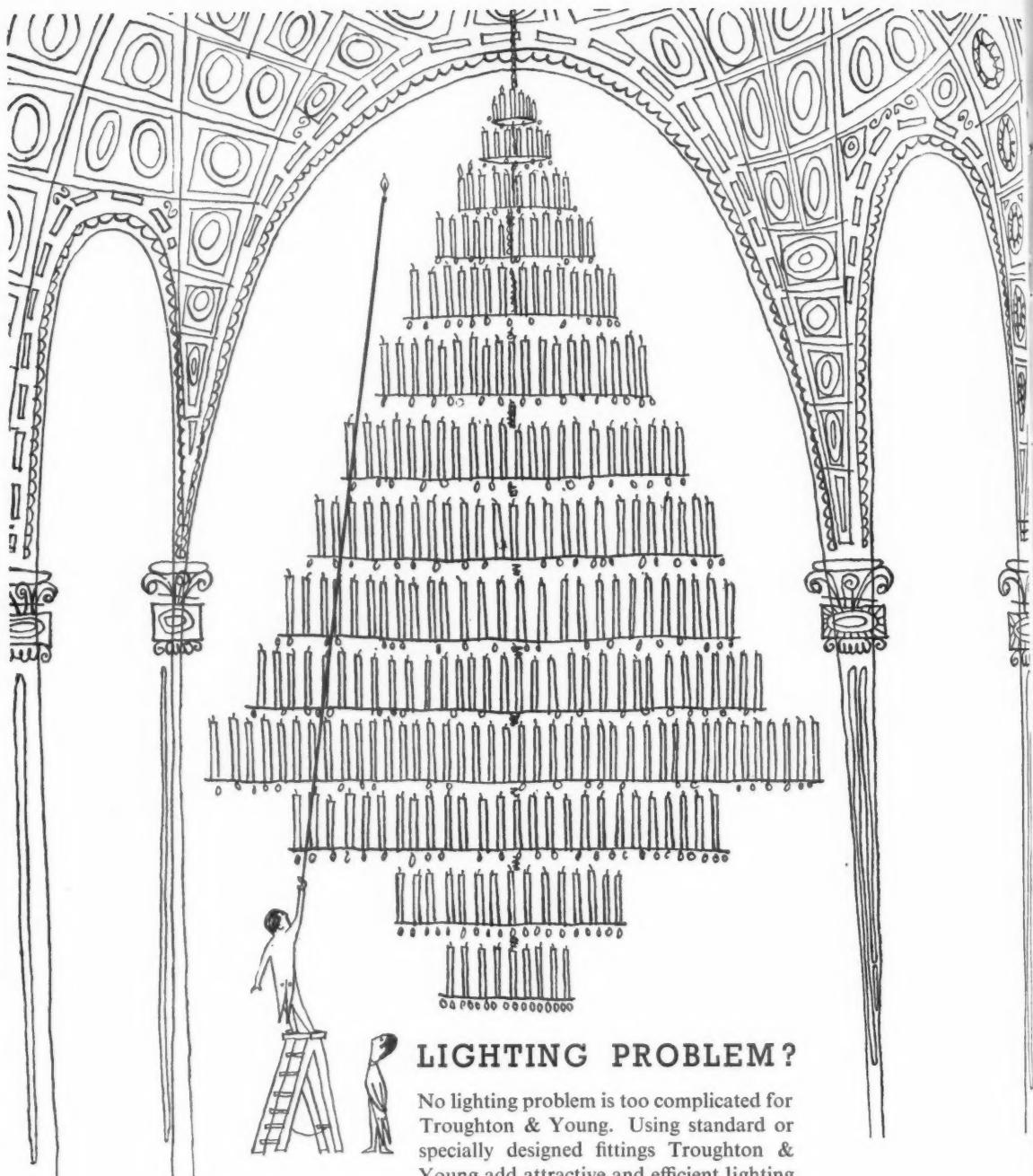
The Quicktho Windowall system, by its flexibility in positioning of windows and ventilators and its beauty and simplicity of design, offers a direct incentive to originality in architectural design.

Made to the highest standard of efficiency, they have been widely acclaimed for their faultless action. The system also provides generous erection tolerances. All sections are of high corrosion-resisting aluminium alloy.

QUICKTHO
ENGINEERING LIMITED

5, GRAFTON STREET, LONDON, W.I.

Telephone & Telegrams: HYDe Park 1806 (5 lines)



LIGHTING PROBLEM?

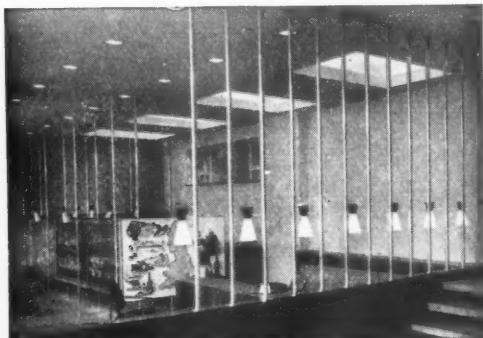
No lighting problem is too complicated for Troughton & Young. Using standard or specially designed fittings Troughton & Young add attractive and efficient lighting to any interior decoration as can be seen in the illustration below.

Why not discuss *your* problem with

TROUGHTON & YOUNG

TROUGHTON & YOUNG (Lighting) LTD.,
The Lighting Centre, 143 Knightsbridge, London, S.W.1.
Tel: KENsington 3444
And at Rodney Street, Liverpool 1.

*Great Northern House, Euston Road. For: British Transport Commission
Architects: Messrs. Oscar Garry & Partners*



38a

2

NEW DEVELOPMENTS FROM

“SASCO”

HELP CUT SITE COSTS

THE “SASCO” WHITE SEAL TREATMENT FOR LIPPED & UNLIPPED HARDBOARD FLUSH DOORS

Now, after months of experiment, “Sasco” bring you the White Seal Treatment—a new finish produced to the highest quality standard. “Sasco” White Seal finish completely masks the colour of even the darkest hardboard and makes the ideal undercoat for all the lighter shades of paint. It seals, fills and primes—and *White Seal* treatment is considerably more protective than ordinary priming.

THE “SASCO” CLEAR SEAL TREATMENT FOR LIPPED & UNLIPPED PLYWOOD FLUSH DOORS

“Sasco” Clear Seal Treatment is a clear natural finish which completely seals the pores of the most difficult plywood—even lauan presents no problem—leaving the door a true natural colour. Clear Seal will take paint, cellulose, varnish, wax, polish—all normal finishes. It is resistant to heat and acid and superior to ordinary priming in resistance to site conditions.

Please write for terms and further details to:

SOUTHERNS
— LIMITED —

HEAD OFFICE:

BOLD SAW MILLS • WIDNES • LANCS

TELEPHONE: WIDNES 2641

Branches at:

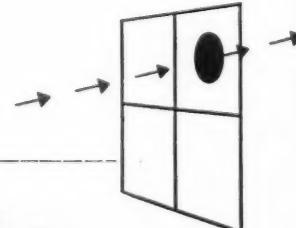
LONDON • GLASGOW • MANCHESTER • DUDLEY • HANLEY • BRISTOL • KETTERING • BIRMINGHAM • EDINBURGH

For unit ventilation specify Vent-Axia



Simple to instal in window, wall or roof

- Intake, Extract and REVERSIBLE units.
- Made in four sizes, impellers 6", 7½", 9", 12".
- Volume of air moved - from 125 - 1,000 C.F.M.
- Speed control, Iris Shutter, Dark Room and other attachments for all models.
- Quiet, Efficient and Economical.
- Suitable for use in any climate.



FOR BETTER AIR CONDITIONS

Vent-Axia

Simplest form of controlled ventilation

60 ROCHESTER ROW • LONDON • S.W.1

Telephone: VICTORIA 2244

BRANCHES AT: GLASGOW • MANCHESTER • BIRMINGHAM • LEEDS • NEWCASTLE-UPON-TYNE • BRISTOL

*There's nothing
as good as
Vermiculite for
FLOOR SCREEDS*

- * Warm in winter
- * Cool in summer
- * Resists fire
- * Saves weight
- * Anti-condensation
- * Absorbs sound

specify **VERMICULITE**

FOR ROOF SCREEDS, FLOOR SCREEDS, PLASTERS AND LOOSE FILL



Send for full details:-
The Association of Vermiculite Exfoliators
59 Gresham Street, London, E.C.2 Telephone: METropolitan 9101



where

weight

matters

LYTAG

Lightweight aggregate gives...

Maximum workability

LYTAG gives greater workability for a particular mix than any other lightweight aggregate, because its spherical particles present the minimum surface area to be wetted.

Minimum shrinkage and high early strength

The low water contents of LYTAG concretes lead to reduced drying shrinkages and give high early strengths. Surface finishes obtained on precast concrete units are smooth and pleasing.

High fire resistance with low 'U' values

The combustible content of LYTAG is less than $\frac{1}{2}\%$. It will withstand temperatures of up to $1,000^{\circ}\text{C}$ without damage. At the same time, it provides a 'U' value well below that of ordinary concrete. For example, the 'U' value of a 6" LYTAG structural concrete element would be less than a half that of the same element in dense concrete.

60% Air—100% efficient

LYTAG is produced from pulverised fuel ash by a carefully controlled sintering process. Spherical in shape, it has a slightly roughened surface so providing an excellent key for the adhesion of cement.

Technical literature covering all aspects of LYTAG will be forwarded on request. Write to:

LYTAG LIMITED

MANOR WAY, BOREHAM WOOD, HERTFORDSHIRE.
Telephone Elstree 2854

A **LAING** COMPANY



when are two heads better than one . . . ?

Uncovered after more than 4,500 years, these two survivors bear witness to an age and culture far removed from our own.

And yet their very substance provides proof of the incredible lasting properties of copper and bitumen combined, that carries a message to the planners and builders of today

The same weathering and rust-resistant values of copper and native bitumen — now derived from Trinidad Lake Asphalt — can again be relied upon in COPPERTRINDA...the finest handmade dampcourse in the modern world.

Lions' heads made of beaten copper over a bitumen core — relics of a Sumerian Temple dated approximately 2600 B.C. Reproduced here by courtesy of the British Museum.



coppertrinda dampcourse

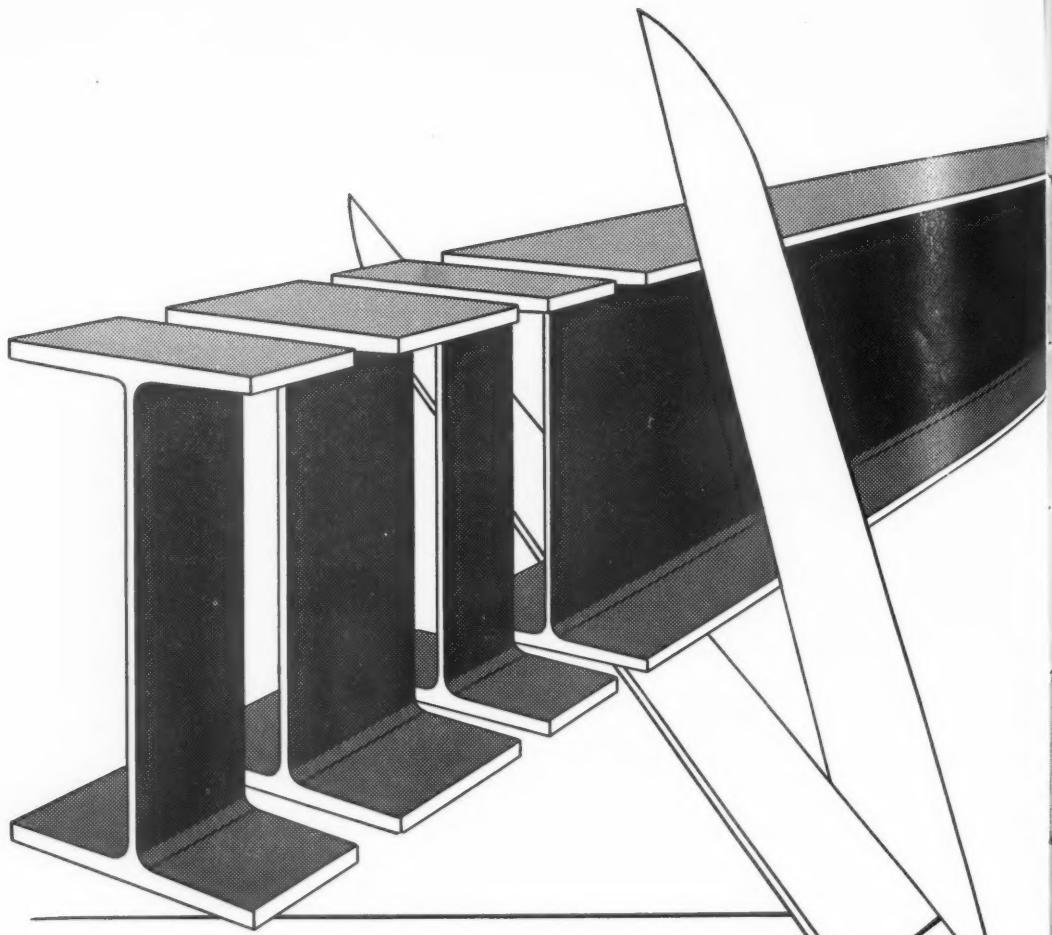
A sample of COPPERTRINDA
Dampcourse is immediately available,
on request, to

ENGERT & ROLFE LTD
Barchester Street · London · E14

Will. ENGERT & ROLFE LTD., please supply
a sample of COPPERTRINDA Dampcourse to:

M
(Designation)
of
Address

P.I.B.A. 11



... yet another cut **IN COST OF STEELWORK**

A recent amendment to the British Standard* provides a simplified method of taking into account the restraining effect of the normal beam-to-stanchion connections.

This further saving in steel is well worth while.

*Amendment No. 1 PD 3857 29 July 1960 to BS.449.1959

BRITISH CONSTRUCTIONAL STEELWORK ASSOCIATION,
ARTILLERY HOUSE, ARTILLERY ROW,
WESTMINSTER, S.W.1

B.C.S.A.



The Journal of the Royal Institute of British Architects

66 Portland Place London W1 Telephone Langham 5533



February 1961
Third Series Volume 68 No. 4
Price 3s 6d

The Allied Societies

Misunderstandings and mutual distrust between London and 'the provinces' can easily undermine the unity and strength of any national organisation. The RIBA is no exception, and the Allied Societies' Conference was specifically created to enable the Societies in the provinces, Scotland, Ireland and Wales to present their views and to contribute their ideas. It has long been obvious, however, that a large conference meeting twice, and more recently three times, a year is a cumbersome piece of machinery, and needs to be supplemented by other devices for improving the two-way flow of information and ideas between the Council and its officers, on the one side, and the Allied Societies and provincial members on the other. The proposals (reported in the January issue) of the Allied Societies' Presidents and the Allied Societies' Conference, approved by the Council in December, should go a long way to keep the centre and the periphery in better touch with each other.

The constitutional reforms, if brought into effect in 1962, will considerably strengthen provincial representation on the Council, not by increasing its proportion, but by allowing the elected provincial representatives to have a continuous membership of three or six years, which gives them time to acquire a deeper knowledge of the problems at issue and to make a fuller contribution. The appointment of the Chief Information Officer, who is also Secretary for Allied Societies, is intended to improve liaison at Portland Place, and when the IUA Congress is past it should be possible to strengthen this department still more. As provincial members cannot attend annual or any other general meetings in London, the President and other honorary officers and staff will go from time to time to meetings of members in other parts of the country. The first of these, to be held in Leeds on 27 May, provides an opportunity for members all over the North of England to discuss the problems of the profession with the leaders of the Institute. Allied Societies are being encouraged to invite the staff at Portland Place to attend their meetings. The Allied Societies' Presidents are to meet at least four times a year in London, partly to act as a steering committee for the Allied Societies Conference, so that it can hold more considered and fruitful discussions on the basis of prepared papers. The Conference itself should meet at least twice a year.

One potential source of friction is, almost unavoidably, finance. The existing system by which the Council returns to each Society a proportion of its members' subscriptions involves both the Institute and the Honorary Secretaries of the Societies in a mass of wasteful administrative work. The Council's decision, reported on page 126, to introduce a block grant for each Society, will eliminate this waste, but it will not greatly alter the financial situation of any Society. In the first instance the block grant is only for one year, to enable the Societies to comment on the proposals. Thereafter the grant, once fixed, will last for three years.

Nobody supposes that this scheme solves all the financial problems of the Societies, or enables the Institute to give all the help it would like to give where it is most needed – although, for the first time, there will be a small fund of £600 a year for special cases. No formula has yet been found that would enable the Council to raise the grant to a point that would enable all Societies to abolish their additional subscriptions and open the door to automatic membership. The solution of these problems depends not only on the devising of ingenious formulae, but on the extension of the Institute's financial resources. Until then the Allied Societies can rely upon the Council to allocate for their use as large a sum as can possibly be spared.

Finance of Allied Societies in the United Kingdom

The following report was prepared by the Finance and House Committee and considered at the December 1960 meeting of the Council, when it was resolved:

That the report be approved in principle.

That the financial allocations set out in it be adopted for 1961 only in the first instance.

That the report be circulated to the United Kingdom Allied Societies for consideration and comment; the scheme to be further reviewed in the light of these comments before the end of the year.

Terms of Reference

1. The present paper considers only the United Kingdom Allied Societies. Not only was the Constitutional Committee's report concerned primarily with United Kingdom Societies, but also the system of calculation and payment of rebates overseas is complex and there is the new question of financing the Commonwealth Conference: rebates overseas would therefore be better dealt with in a separate paper to follow.
2. Recommendations 3 and 34(f) in the Final Report of the Constitutional Committee approved by the Council at their meeting on 3 May 1960 were as follows:

'3. That financial allocations from the RIBA to the Allied Societies be fixed in total for a period of three years at a time, and that within this total the allocation to each Society be fixed on a basis to be agreed, but related to the number of RIBA members of each Society.'

34(f). The finalising of arrangements under recommendation (3) above - through the Finance Committee and the Allied Societies concerned, and the sorting out of the equitable distribution of financial allocations within certain Societies, subject to Finance Committee and Council approval.'

Present System

3. Under the system enforced by the present bye-laws, each Society in the United Kingdom receives a sum annually made up of one-quarter of the RIBA subscription paid by each Fellow, Associate, Licentiate and Student, RIBA, who is a member of the Allied Society. The United Kingdom subscription rates are: Fellow 12 gns., Associate or Licentiate 7½ gns., Student 2 gns. It will be seen that the total sum received by each Allied Society in rebate depends at present on the proportion of each class of member in the Society. Societies with a high proportion of senior members receive a higher sum *per capita* than those with a high proportion of Students. It can be argued that Societies with a high proportion of young members need proportionately greater help.
4. This system was first introduced in 1889 when the proportion was fixed at one-quarter. In 1925, it was increased to one-third, in 1939 it was reduced to one-quarter, in 1947 it was increased again to one-third, and in 1957 it was retained at one-third for overseas Allied Societies but reduced to one-quarter for United Kingdom Societies.
5. There is an anomaly in the present system since the bye-laws legalise payment only to non-metropolitan Allied Societies, i.e. those which do not meet within eight miles of Charing Cross.

Previous Study

6. In 1951 at the instance of the Wessex Federal Society, the Council examined the rebate system but decided that there was not then any case for an increase in subscriptions or an alteration to the bye-laws to permit of bigger sums being paid out. In 1955, on the decision to increase subscriptions, the Council instructed the Finance and House Committee to review the whole question, including the qualification for rebate and the sums paid to the Allied Societies bordering London. In 1956, the Allied Societies' Conference asked for special consideration to be given to what might be done to help smaller societies and those in rural areas. A questionnaire was sent to the United Kingdom Allied Societies.

7. An analysis of the replies was prepared together with a review of the methods of finance and a series of alternative proposals, but at this point the Constitutional Committee had been appointed and the matter was referred to them. In their turn, they asked the Finance and House Committee to examine the possibilities of a scheme of grants assessed under the headings of administrative requirements, distance from London and the number of RIBA members. The Committee examined detailed calculations and decided that the only practicable system was one of grants distributed from a total figure in proportion to the needs of Societies. Two other alternative schemes were discussed between the two Committees, one of which made allowance for population centres and areas of Societies and another on a 'points' system for the administration of Chapters and Branches.

8. The Constitutional Committee finally decided that all complications should be avoided if possible and placed on record the following principles:

'The grant to each Society should be calculated on a basis broadly proportional to the total of RIBA members, irrespective of class, in the Society. No Society should get less on the new basis than received in 1959. There should be some curtailment of any increase in grants to home counties Allied Societies owing to the proportion of their members working in, or living in close proximity to London.'

Study since May 1960

9. After the Council had approved the recommendations referred to in paragraph 2 above, it was left to the Finance and House Committee to hold a further discussion with representatives of the Allied Societies' Conference. This was done and the previous study was reviewed in detail. The representatives of the Allied Societies' Conference felt strongly that some recognition must be given to the basic administrative needs of the smaller Allied Societies. They also pointed out the new requirement of postal ballot for election to Allied Societies' Councils and the declared aim of working to one hundred per cent membership of Allied Societies by RIBA members in each area. Both these factors must make for increased administrative costs in the future.
10. The Finance and House Committee felt that there were two principles to be observed. Firstly, the Institute must have control of the total sum to be disbursed each year: on the present system, they have no such control, so the new system must involve a proportional distribution of some fixed total sum. Secondly, any system of distribution must be simple and equitable and generally recognised as such.

Cost to the RIBA

11. The actual cost of rebates paid in 1959 was:	
United Kingdom Allied Societies	£17,766
Royal Institute of the Architects of Ireland (a)	£214
Overseas Allied Societies	£4,120
Total	£22,000

The estimate for 1960-61-62 is £24,500 per annum.

Note: (a) Not actually paid out. Members deduct one-quarter before sending their subscriptions to the RIBA.

12. The Finance Committee considered that for 1961, a figure for the United Kingdom not exceeding £20,000 should be taken and that this should be divided in such a way as to leave a small reserve uncommitted from which special cases of need might be met.

Administration

13. The present system involves the Honorary Officers of Allied Societies and the Cashier's department at the RIBA in a heavy burden of work since rebates are calculated individually on RIBA members resident in each area. Each Society has to prepare a claim annually showing the names and addresses of RIBA members in the Society who are claimed for. The list has to be certified by the Officers of the Society and, on receipt, must be checked as to actual addresses and whether subscriptions have been paid. This work could be completely eliminated in two years out of three if a proportional distribution were made calculated on the relative strengths of Allied Societies and operated over a three-year period, at the end of which both the sum for distribution and the strengths of Allied Societies would be reviewed. Moreover, Societies would know in advance what their income would be and it could be paid in the first quarter of the year since it

would not be necessary to wait for the submission and checking of claims which cannot at present be prepared before the last quarter of the year.

Proposed New System

14. The Committee accordingly recommend that from 1961, the following scheme be introduced in the United Kingdom:

- (a) From a global sum of £20,000, £1,000 be retained in reserve.
- (b) £19,000 be distributed in proportion to the total strengths of RIBA members (Fs, As, Ls, Ss) in Allied Societies as returned for the purposes of claiming in 1959.
- (c) That no Society receive less than it did in 1959.
- (d) That no Society receive less than £250.
- (e) That the amounts required for adjustments described at (c) and (d) above be taken from the £1,000 reserve.
- (f) That the balance of £600 be retained as a special reserve from which additional grants may be made on application by Allied Societies for particular purposes or special needs.
- (g) That these grants be paid annually in 1961-62-63 and that the global figure and the strengths of Allied Societies be reviewed during 1963 with a view to adjustment for the next triennial period.

RIBA Topics

New Year Honours

Knight Bachelor: W. O. Hart, CMG [Hon. A], Clerk to the London County Council.

CBE: G. A. Jellicoe [F], Past President Institute of Landscape Architects; A. G. Jury [F], Chief Architect and Director of Town Planning, City of Glasgow; Roland Penrose, Chairman of the Institute of Contemporary Art.

OBE: S. J. Docking [A], Principal Inspector, Ministry of Housing and Local Government; A. B. Agard Evans, MSC, Librarian, Ministry of Works; N. Stanley Farrow, MBE; Lord Mottistone [F] for services in the construction of the Chapel of the Order of the British Empire in St Paul's Cathedral.

MBE: P. W. Haine [F], Command Architect, Southern Command, War Office; H. H. Powell [F], Architect, Eastern Region, British Railways; K. A. R. Purdon [A], Senior Architect, Federation Ministry of Works and Surveys, Nigeria.

Mr William Wilson, artist in stained glass, who was responsible for the Architects' Window, Guildford Cathedral, receives an OBE, and Mr George Mason, Staff Photographer, the National Buildings Record, an MBE.

IUA Congress News

At the time of going to press 800 registrations had been received, about half of them from this country.

Additional to the programme outlined in the November JOURNAL, will be an international exhibition of books on the Congress theme - 'New Techniques and Materials, their impact on Architecture', which will be displayed in the building which Mr Theo Crosby [A] has designed for the international architectural exhibition. Each national section has been invited to contribute 20 books. The exhibition will include an international display of architectural journals. The exhibition will be organised by the National Book League who will also prepare a catalogue in the four official languages of the IUA.

The Congress Organising Committee would like to hear from more members who have fluent French, Spanish, Russian or German, to act as interpreters. Membership of the Congress will be free to those who are selected for this service.

Cover Picture

Since the IUA Congress is in London, it seems right that this

year's cover pictures should include different aspects of the capital.

This month's picture shows the tall blocks of the new LCC Brandon Estate reaching up to the horizon beyond the trees of Kennington Park, with the old South London street pattern in the foreground. The role played by the 18th-century church spires as silhouette is being taken over by the modern high blocks, and the contrast in form is there to be seen. The eye reacts differently to each, and the importance of considering the total effect as the high blocks go up everywhere, becomes apparent.

The Brandon Estate accommodates 5,000 people, and the tall blocks are 172 feet high with views at the top from Hampstead Heath to the Crystal Palace. The adjacent area of old but sound houses has been skilfully rehabilitated and integrated with the new scheme.

Michele Sanmicheli Exhibition

Last summer a very fine exhibition of the work of Michele Sanmicheli was shown in the Palazzo Canossa, Verona. The exhibition was grouped chronologically and according to types - palaces, religious buildings, military buildings and fortifications. Sanmicheli's work was illustrated by means of photographs, drawings and plans, and some very interesting wooden models and sections showing construction methods and the interiors of some of the buildings.

The RIBA is endeavouring to obtain the exhibition from Verona and the authorities there have expressed their willingness for it to be shown in this country. At the time of going to press, however, confirmation as to the date of dispatch is still awaited, but it is hoped that the exhibition will arrive in time to be shown during March.

An abbreviated catalogue is being prepared to which Dr Peter Murray will contribute an article on Sanmicheli.

Congrès Internationaux d'Architecture Moderne

In a letter from Zurich, Professor Sigfried Giedion writes: 'Sometimes rather strange publications about the CIAM activities appeared in the press of different countries. Not without great hesitation J. L. Sert, W. Gropius, Le Corbusier and myself wrote the enclosed letter, trying to clear the situation'.

This letter is printed on page 160.

Council Business

The Council met on 10 January with the President, Sir William Holford, in the Chair.

The Secretary's Report

The Royal Gold Medal. This year's recipient, Mr Lewis Mumford, cannot come over from America for the award on the date announced, 11 April. It is therefore proposed to hold the ceremony on 27 June.

Admission to Alliance of a Society in North Staffordshire. At their meeting in November the Council considered a proposal that an Allied Society area might be created in North Staffordshire to cover a gap in the new regional structure. It was left to the Secretariat to arrange for a meeting of RIBA members in that area to discuss the proposal with a view to a ballot being held early in 1961.

A meeting was held in Stafford on 15 December last, attended by about 40 RIBA members, all RIBA members (some 200) having previously been circularised with a résumé of the proposals. Mr Percy Woodcock [F], County Architect for Stafford, took the chair. Mr A. H. Gardner [F], President of the Birmingham and Five Counties AA, and Mr George Greaves [A], President of the North Staffordshire AA, attended. Professor R. A. Cordingley [F], President of the Manchester Society of Architects, was unfortunately committed to a prior engagement.

The meeting was representative chiefly of members in the area of Stafford, at present part of the Birmingham Association. There was one member from South Cheshire and a few from the North Staffordshire AA area. By prior agreement, no resolutions were passed and no vote was taken. There was a general expression of opinion that some closer integration with the RIBA would be welcome and that a Society in the area directly allied to the RIBA might be supported.

A further memorandum and a ballot paper will be sent to all members in the area, after the particulars have been agreed by the three Societies concerned. The results of the ballot will be analysed in three areas: the existing North Staffordshire AA area, the present Birmingham Association area round Stafford, and the present Manchester SA area round Crewe and Congleton.

Survey of Architects' Offices. Up to the end of January, 25 offices had been visited by the Survey Team. By the end of March more than 50 offices, private and public, spread over England and Wales, will have been 'surveyed', and it is hoped to cover between 60 and 70 by the end of April. The contract date for completion of the team's report is June 1961.

It may be of interest to describe what a typical day's visit consists of. The team, usually of three people, meet at 9.30 to examine the preliminary written questionnaire which has already been completed by the office to be visited. By 10.15 they are at the office, and spend most of the morning round a table with the partners or the chief architect and his senior staff. At this stage, a second series of questions is put, both to amplify the written questionnaire and to cover subjects that cannot easily be dealt with in writing. Discussion of such hardy subjects as the education of architects, or the 'Second Category', continues over lunch. A quick tour of the office follows, then the team breaks up. An architect member (either Mr Austin Smith or Mr Derbyshire), visits the drawing office and goes through procedures with the senior assistant, and looks at the drawings for perhaps three individual jobs; he is armed with a further questionnaire designed to help in assessing the standard of technical and design service given to the client in so far as this can be measured. The management consultant, Mr Howard, examines what procedures exist for controlling the finances of the office and for planning and programming individual jobs. Miss Milne, Deputy Secretary,

Board of Architectural Education, looks more closely at the staffing of the office, including the levels of responsibility held by members of the architectural staff and the use made of non-professional staff, technical and non-technical, to relieve the architects of some of their load. She also discusses problems of education and the need for the second category with a few members of the architectural staff, chosen at random.

Between 4 and 4.30 p.m., the team depart, leaving behind requests for additional information in the form of analyses of the costs of different jobs, of the financial statement of the office's income and expenditure, the balance sheet for the past five years, and a daily diary sheet filled in by each member of the architectural staff for one week.

The team then retire to a secluded place and spend perhaps two hours discussing the information gleaned, and writing their report on the office. They insist on finishing their work on one office before starting on another the following day; they have yet to end a day's work before 7 p.m.

After each visit, the answers to a number of key questions are transferred to summary sheets to make it easy to compare the answers received from different practices. This should enable the team to analyse the overall results of the Survey readily without going back to original questionnaires and reports.

Architects' Benevolent Society. The ABS appeal directly by post to every architect has increased their income through promised subscriptions and deeds of covenant by over £2,000. Their Council wish to thank the RIBA Council for providing the usual addressograph facilities and for paying the postage.

Christmas Holiday Lectures

The reputation of the RIBA lectures for boys and girls stands very high. They are so popular that nearly half this year's audience had been to earlier ones. About 40 were children of architects out of a total of over 500.

Mr Eric Lyons' strong personality went down well. His crisp, spare commentary to the slides left nothing blurred. Mixing good sense with enough irony to kindle a critical sense in the minds of the children, he talked about 'Neighbourly Houses', and they were left in no doubt about what he thought on such matters as housing density, green belts, gardens, lamp standards, the problem of the motor-car and much else. The questions afterwards were excellent - right on the ball. One in particular deserves to ring in many ears. It was: 'We love London. What are you going to do to London?' The Chairman for the lectures was Mr John Stillman [A]. Replying to one questioner, he gave a particularly succinct explanation of why street lighting is so poor in design.

Brave New London Anonymous

A small leaflet with the title 'Brave New London' is sent out free by London Transport to anyone who writes for it. In its own words it presents a selection of the many new buildings of all kinds to be seen in London today and says how to get to them. 'Some are complete, some are growing; some are magnificent, others could be more successful. Visit them and make your judgement. Applaud or criticise as you will, this is the face of BRAVE NEW LONDON.' Thus the blurb.

Then follows a list of 24 recent or fairly recent buildings. The visitor who used this list as the basis of an itinerary would not have been misled. But why does the leaflet omit the names of the architects?

Football fans are not to be satisfied with the information that Spurs scored three goals by no matter whom. Why then should the people who are sufficiently interested in today's architecture to write for the leaflet - and 8,000 had done so by the beginning of January - not be told who designed them? Perhaps London Transport will add this information in any future editions.



Lewis Mumford was born in Long Island in 1895. He was educated at the College of the City of New York, Columbia University, and the New School for Social Research. He was Professor of Humanities at Stanford University from 1942-44, Visiting Professor of city and regional planning at the University of Pennsylvania 1951-56, 1959-61, and Visiting Bemis Professor at Massachusetts Institute of Technology 1957-60. He was a member of the Board of Higher Education, New York City, from 1935-37. He is an Honorary Member of the International Housing and Town Planning Federation, American Institute of Architects, the Town Planning Institute of Great Britain, the American Institute of Planners, and the Town Planning Institute of Canada.

Royal Gold Medal for Architecture 1961

Her Majesty the Queen, on the recommendation of the Royal Institute of British Architects, has awarded the Royal Gold Medal for Architecture for 1961 to Professor Lewis Mumford, United States of America.

This is the eighth occasion on which the Royal Gold Medal has been awarded to an American.

The Royal Gold Medal for the promotion of Architecture, instituted by Queen Victoria in 1848, and continued by King Edward VII, King George V, King Edward VIII, King George VI, and by Her Majesty Queen Elizabeth II, is conferred annually on some distinguished Architect, or man of Science or Letters, who has designed or executed a building of high merit, or produced a work tending to promote or facilitate the knowledge of Architecture or the various branches of science connected therewith.

The Royal Gold Medal is usually presented to the recipient in the spring of each year but as Professor Lewis Mumford will be coming to this country late in June to attend the Congress of the International Union of Architects the Medal will be presented to him, subject to confirmation, at a meeting to be held at the RIBA on 27 June at 6 p.m.

The name of Lewis Mumford is associated in everyone's mind with the word 'cities'. Even by those who have not read him he is regarded as the doctor in this matter - the

man sitting at the civic bedside with a finger on the patient's pulse. The latest bulletin will be posted up in his forthcoming book, *The City in History, Its Origins, Its Transformations, and Its Prospects*.

His world-wide reputation springs from such earlier books as *Technics and Civilization* which appeared in 1934, and *The Culture of Cities* published in 1938, in which he points out the changes in the structure of cities caused by social, political, economic and defence factors.

A disciple of Sir Patrick Geddes, Lewis Mumford has taken a keen interest in post-war town planning in this country as well as in America. He became an Honorary Associate of the RIBA in 1942, and in 1957 was awarded the Gold Medal of the Town Planning Institute.

Reviewing *The Culture of Cities* in the JOURNAL, November 1938, Sir William Holford wrote:

'Not long ago Lewis Mumford published a work entitled *Technics and Civilization* which was frowned on by scientists but which proved extremely stimulating to artists. His new book, *The Culture of Cities*, which is something of a sequel to it, is a more direct and satisfying expression of the author's creative mind and encyclopaedic intelligence. . . .

'Taking the Geddesian trinity of Place, Work and Folk as a text, one can cite Patrick Abercrombie as a notable teacher of the art of planning with the emphasis on the first of these three conditions. . . . Mumford's emphasis is on the third. His main interest is the social basis of the new urban order, the changeover from a money economy to a life economy, and the establishment of a regional framework for civilisation. In his view the *civic* education of the individual is of prime importance, in that it alone can raise the collective energy and collective wisdom of a community to the point where it can adapt its environment to its need, instead of *vice versa*.'

Sir William concluded his review with the opinion that '*The Culture of Cities* may well prove one of the enduring books of the day. Lewis Mumford may be compendious and exacting; but he has the true synoptic vision.'

Lewis Mumford is also a regular contributor to the *New Yorker*. The following excerpt gives the flavour of his writing:

'any failure [of F. L. W.'s] must be viewed within the perspective of his long series of triumphs in a career pursued without regard to historical convention or chic contemporary stereotypes. By the same token, when Wright failed, he failed with originality and decision - the inverted triumph of a great acrobat who so despises the safety nets that he would rather break his neck than rely on them. Wright dared greatly in all that he undertook, and above all he dared to be himself. Loving Emerson, he must have recognised a special personal blessing in Emerson's statement that "whoso would be a man must be a nonconformist". Wright lived to see the confident, self-reliant America of Emerson and Whitman, even the mugwump America of Howells, turn into that meek, tame, gossipy corrupt totalitarian "democracy" which now lives - or half lives - in the shadow world of the television screen. To one who had the audacity to sin against the conventions of this society in almost every way except for its love for exhibitionism and publicity, much may be forgiven. Wright was a chip off the old American block' . . .

(From 'What Wright Hath wrought', *New Yorker*, 5 Dec. 1959.)

Lethaby Lectures, 1961

The Royal College of Art's 1961 Lethaby Lectures are being given by Henrique Mindlin, the well-known Brazilian architect. The subject of the three lectures will be Brazilian architecture and they will be entitled 'Baroque across the Sea', 'Europe and the Tropics' and 'Brasilia - Dream or Reality?' They will be held at the RIBA, at 5 p.m. on 15, 20 and 22 February. A limited number of admission tickets may be obtained from the Registrar, Royal College of Art, Exhibition Road, SW7. Mr Mindlin practises in partnership with Giancarlo Palanti in São Paulo. He is also architectural editor of *Brazil - Arquitetura Contemporânea*, and a member of the Council of the Brazilian Institute of Architects.

Architectural Misconceptions of Engineering

By A. J. Harris, BSC(ENG), MICE, MI STRUCT. E, M CONS. E

Given at the RIBA on 13 December 1960. The President, Sir William Holford, in the Chair

My intention this evening is not polemical but explanatory. During many years of working with very good friends who are architects it has on occasion seemed to me that they did not quite know what engineering was about. In consequence I thought perhaps I should give my ideas on the subject, and if as I go I can clear up one or two of the less glaring misconceptions – I will not deal with the more glaring ones because it might create too much bad blood – we may be somewhat advanced. In so doing I have no doubt that misconceptions on the part of the engineer concerning architecture will be revealed, but I understand that time will later be available to deal with these.

First of all engineering is clearly an art and not a science. One is entitled to choose one's own definition of these words, and art I assume to be any direction of the practical intellect to the making of things. The job of the engineer is making things, or if you like, imposing an idea or a form upon material, upon matter. There is a science of engineering, there is knowledge which is necessary if the engineer is to do this, just as there is knowledge which is necessary on the part of any artist to do anything at all, but the essence of the activity is that it is an art.

The second point is that it is rife, it is widespread, there is a lot of it going on. Electrical, mechanical, civil, aeronautical engineering comprise a vast body of endeavour and devotion and a large volume of product. In a certain mood one casts one's eye over this product and tends to dismiss it as so many cartloads of junk. In yet another mood one can see it as a major auxiliary factor in the enormous increase in the world's population this last century, a feature which is perhaps the engineer's final justification.

Anyhow, it is a very broad field of human activity and civil engineering, the profession to which I belong, occupies what is relatively only a corner, but is still pretty substantial. If one looks at the average consulting engineer's drawing board – I am thinking of a particular firm of moderate size – what does one find? Harbour works, bridges large and small, hangars, heavy foundations, machinery beds, nuclear reactors – I mean the works and not the buildings – generally speaking, a very wide range.

Now there is a frontier where civil engineering meets the architectural profession. Do not think I nourish an illusion of grandeur when I say that the proportion of civil engineering which adjoins this frontier is rather small. In fact, when in a fanciful and possibly slightly satirical mood, one pictures oneself looking out over the hall of the arts and sciences. There they are ranged before one – mechanical, civil, the list as before. And there, if you raise the head and turn slightly right, is a tastefully decorated and rather crowded musician's gallery in which, with their backs to the hall, sit the architectural profession.

I trust I have made my point that engineering is basically an art and that the science of this particular art is that needed to impose shape and form on material. This leads us to our first misconception. The foundation of engineering is knowledge of materials, not, as engineers are so often apt to preach, a knowledge of mathematics. It is true that every profession has what we may familiarly call its own line of 'bull', and I am afraid that few engineers have been able to resist the

temptation to shoot the mathematical line. I nevertheless maintain that the basis of engineering is knowledge of the materials being used; knowledge of what they are made of, how they are made, how they are shaped, how you fit them together, how they stand up to stress, how they break, how they catch fire, how they react to all the various agencies of ruin which are perpetually nibbling at them, how in due course all fall down.

This is the true basis of engineering. Now this is the sort of knowledge which in the old days was natural to the craftsman. The craftsman got this knowledge by himself working the materials, so knowledge came almost through the fingertips. An example of this knowledge is that willow is the right wood for cricket bats. Why this is so, I do not know. It would be difficult to express the particular suitability of willow for striking a cricket ball, but anyone who tried to strike it with a bat made of oak would doubtless be well placed to remark on the superiority of willow. That sort of knowledge, the craftsman's knowledge, is a precursor in time of the knowledge which is necessary to the engineer, but it took the craftsman a long time to find it out, probably generations, perhaps centuries. By a long process of trial and error it was certain, but it was very slow, and the speed at which we work these days is different and the scale on which we use materials is in any case such that it is difficult to get this craftsman's knowledge.

Here is where mathematics come in as something exceedingly helpful to the engineer. The mathematical approach enables one to determine the characteristics of a material in a remarkably short space of time. This century a large number of new structural materials have become available. We have recently re-invented timber, whose use has been revolutionised by new glues. We have prestressed concrete and aluminium; before those, reinforced concrete. Before that again mild steel. All these materials in their various forms effected a revolution in the art of building and their characteristics, which in the old days would have taken centuries to understand, have been determined at an ever-increasing speed. For instance, we know a great deal about prestressed concrete and this took about 15 years. It took us about 60 years to get reinforced concrete to the same stage of development, and possibly a little longer for structural steel.

Here one must define where one stands, since an opinion on mathematics varies in value according to whether one is ignorant of the subject, or knows a lot, or once knew a lot and has now forgotten it. Let me say then that once upon a time I fancied myself at maths – but this was before the war. Then during six years of war the only calculations I made were those which could be done on the move. This revealed two things to me: one was that at the end of the war I was no longer much good at mathematics – the internal coefficient of friction was so high that it took me weeks to do the simplest of operations; the other was that perhaps mathematics were not quite so indispensable an implement after all.

What is the typical activity of engineering? The initial action of the structural engineer – I hesitate to use the word 'creation' because it sounds ponderous – is that of inventing, discovering, dreaming up the shape of a structure. This is beginning to lead us into a further misconception, the

business of structural economy. It is impossible to dream up a shape of structure without having some idea of the material of which it is made.

Structural economy has no existence except in terms of a certain structural material. Let me give an instance. One of the most banal of structural materials is, I suppose, mild steel. You buy a little handbook bound in red leather which tells you a great deal about standard forms which mild steel takes.

You take your book, open it at the right page and run your finger down the column, and there you have it, the shape you want. This, you may say to yourself, is steel engineering. So it is, but it is steel made in a certain way. It has been rolled when hot. If your material is steel which has been cast, or rolled when cold, the shape of your structure, all your conceptions of structural form, all your calculations of economy will be radically altered. I say this because I have detected on occasion amongst those with whom it has been my pleasure to work an idea that there is an ideal structural form dictated by economy. True, but there is no such thing as structural form divorced from the matter of which it is made.

Occasionally one reads laudatory words concerning some of the pioneers; Leonardo da Vinci on the basis of his sketch books is occasionally put forward as one of the great early engineers. He was a great man, but I would put in a word to the effect that he was not an engineer. A man who dreams up a structure or a mechanism when there is no material with which it can be made, however brilliant the mind which conceived the structure or the mechanism, as an engineer the man is an ass.

Having conceived the structure in terms of a given material, one then has recourse to one technique or another to see if it is going to stand up or not. A delicate moment, Ladies and Gentlemen! One on which much depends.

One of the ways of doing this is to analyse the stresses mathematically. There are many other ways. One is to build a structure and see if it falls down; this is the way it used to be done. Another is to make a model and test it. This is a technique which is becoming increasingly used and of greater and greater importance as the various scale factors and the instrumentation become more highly developed; you still have to know, as you do when you are undertaking mathematical analysis, what questions you want to ask, which means that you must understand your structure first. But there are many ways, having designed your structure, by which you can then ascertain that your structure will be adequate.

Mathematical analysis is one of the most powerful human achievements. The works of great mathematicians are the epics of our day; they have their majesty. Nevertheless, in practical day-to-day engineering, one must never forget that one never gets out of a mathematical operation more than one puts in; it merely renders explicit what was implicit in the hypotheses and data.

My father-in-law is a professor of mathematics and I have had many an occasion to explore the gulf which lies between us, and I think I could sum it up by saying that to the classical mathematician two plus two equals four, whereas to the engineer two plus two is of the order of half of ten.

I mentioned the invention of forms. This is the basic design operation and engineers come along at regular intervals with new forms. There is only one exception that I know of to the general law that the shapes come first and the analysis follows much later, and that is the hyperbolic paraboloid. That is a piece of pure mathematics. It was in the '30s that two Frenchmen, Aimond and Laffaille, showed the apparent simplicity of the mechanism whereby it supports uniform load; it was not until many years afterwards – first of all in a very small way in France, and then to a slightly greater extent in Eastern Europe, and then finally, as a rather late burgeoning, in Mexico by Candela – that anybody got round to building hyperbolic paraboloids. It is the single exception to the rule that engineers invent their structures first and do

not wait for complete knowledge – they just build them. Much later come the analysts, and often by the time that the rigorous analysis has been achieved, that particular structural form has passed out of current use.

It is interesting to note, moreover, that the engineers who are known to architects (I am tempted to reduce the phrase to the engineers who are known) are those who have presented architects with new forms. Let us look back over this century. Who are they? Maillart. He built a few small but exquisite bridges in Switzerland. There was Freyssinet, an interesting case. He is known to architects as the man who prior to 1930 invented many new forms of shell roof, and several novel forms of bridge. He also invented a new material, but in respect of this I get the impression that he is regarded as a sort of ironmongery merchant, though the new material is of far greater significance than the structural forms. Since Freyssinet we have had Nervi and Candela and many others. If, however, you ask who were the great inventors of purely engineering forms – of suspension bridges, of multiple arch dams, for instance, no one seems to know. There is a paradox here.

Passing to the employment of engineering forms, nine times out of ten these are produced for a particular purpose usually with a given material in view. They then become famous; shell roofs for instance, are very popular amongst architects.

While one has to be grateful for the rapidity with which the new shape becomes a matter almost of fashion, the process leads insensibly to the emergence of what one might call an engineering style in which the engineering forms are used quite out of context. Am I alone in having seen scattered around this town shell roofs which consist of expanded metal plastered over and hung from steel trusses? There are many instances of the kind where a form has been taken for its own sake and built in some completely different material merely because it has become rather chic.

My next misconception has to do with the relation between engineering design and scientific knowledge. Scientific knowledge, of course, is another of these rather cloudy phrases and again I exercise my right to define the terms I am using. Scientific knowledge, as it is known to the engineer, is basically physics, which is the knowledge of material by measurement. The typical process is that if there is a phenomenon which you want to investigate, you isolate some variable, measure it many times and plot your measurements. You then join your points together with a curve if you can; if not, you draw a curve through the middle of the lot. Then you express this curve in the form of a mathematical expression and from that you can predict, with a greater or lesser degree of confidence, the prolongation of the curve; its derivatives provide much singularly useful information. Now this sort of precise knowledge is desirable for design in as great a degree as possible. The more knowledge we have of our materials and of the functions to which we put our structures, the better the structures will be.

The misconception is that the scientific solution is a cramping and unique solution; that as soon as you undertake scientific analysis of your structure and its function you are immediately bound by the knowledge which you obtain and freedom and spontaneity disappear. Now here I think one is touching on one of the basic beliefs of engineers. A unique scientific solution is conceivable; one can conceive of knowing so much about the function for which the structure is intended, and so much about the material of which it is made – knowing all the forces, all the agencies of ruin to which the material and the structure are submitted – that you can create a series of optimum solutions. Now from these optimum solutions it is possible to choose one which can be produced with the minimum expenditure of human labour. This solution would be unique and necessary. It is the basic if unavowed, belief of the engineer that if ever he reached such a solution he would have created a structure of superhuman, of angelic, beauty.

This is the motive which underlies the common exercise of the design process by the engineer. In point of fact we are very, very far from such a solution. We have very little precise knowledge about what our structures are being used for; our invention of forms is marked by an extreme paucity. The degree of confidence which we have in our stresses and our loads is well indicated by common factors of safety, which may vary between two and five, according to the confidence we have in the manufacture of our materials, in the skill with which they are put together, in the certainty with which we know the loads imposed upon them, and in the certainty with which we have analysed our stresses. So that whilst it is true that a unique solution is indeed conceivable, in practice we are a very long way away from it, and the greater the degree of precise knowledge we can obtain concerning our structures, the better those structures will inevitably be.

There is another misconception which I would like to deal with now and that is this. I hope I have given the impression that the engineer starts off by drawing. All the etymological origins of the word 'design' are related to drawing, and the earlier the stage in the design process the softer the pencil and the farther you are away from the 6H sharpened to a chisel point. If, then, the engineer starts off with a piece of charcoal and leaves detailed mathematical analysis for much later, and if he often does not, and sometimes cannot, use such analysis at the moment when the really important decisions are taken, it is tempting to suppose that the whole thing somehow becomes much easier. This is a misconception akin to that of the young fellow anxious to entertain at Christmas who, dismayed by the impedimenta and mechanics of illusion, decides that sleight of hand is the thing for him. A movement of the hand in the air and four billiard balls appear. It looks so easy. In fact, so far from design being easier if you dispense with mathematics, it is very much more difficult. And whilst it is true that the creators of new forms and structural shapes did not always wait for rigorous analysis, they paid for the lack by grossly exaggerated factors of safety, for if you do not know what you are doing you are bound to play safe. If not, sooner or later disaster will come.

There is an interesting feature about engineering and that is the large number of engineers who have had disasters late in life. This goes right through the history of engineering. To go back no farther than Navier, the man who first solved the problem of designing a beam; he built a suspension bridge over the river Seine. It fell down and the shock killed him. There was the engineer whose name I do not know who built a splendid viaduct in South Wales; he got worried by his calculations and threw himself off the edge. There was Brunel; in recent days, the Malpasset Dam. The tragedy may lie in that odd process whereby when he is known and does not have to battle everything through the authorities and is surrounded by a swarm of disciples, who listen to his every word and set it down with a view to a book of memoirs when he dies, the engineer sooner or later comes to feel that the materials which he uses have also taken cognisance of his reputation and will do what he wishes them to do. I do not know what the critical age is but I am watching it carefully.

Now I come to my last point. There is a distinction between objects of utility and objects of delight - works of art which are made to be useful and works of art which are made to please. The engineer is an artist concerned primarily, almost entirely, with the object of utility. I offer no opinion as to what extent the work of the architect consists of each, for that is no concern of mine. I know perfectly well that as far as the engineer is concerned utility reigns, but this does not mean that you will not get a job produced by a junior presented to a senior and slung out because it looks bad - 'Go away and make a decent looking job of it', he will be told. There is an aesthetic instinct, possibly rudimentary but deep seated, in all engineers. Nevertheless, the invention of

the engineer is primarily directed to the production of objects of utility.

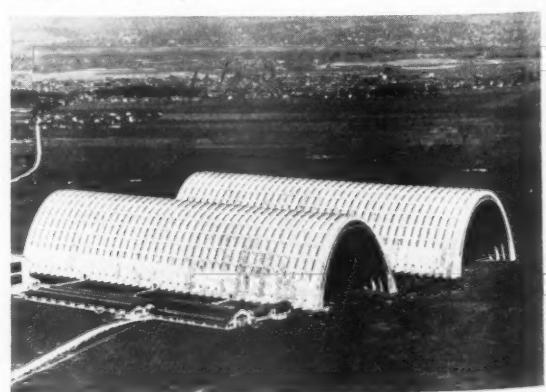
Now the misconception here is that the absence of the intention to produce an object of delight, an object giving pleasure, necessarily entails a failure to produce such an object. The fact that you are trying to make it pretty does not mean to say that you will; the fact that you are not expressly trying to make it pretty does not mean that you will not.

Freyssinet has written rather powerfully about this in connection with his airship hangars at Orly, built in 1923, a startling structure, blown up during the war. A British architect once said to me before the war, 'Ah, yes, the hangars of Orly - the Parthenon of the modern world'. It is the sort of thing which architects do say on occasions. I repeated this to Freyssinet. He thought for a moment and then said, 'That is an exaggeration'. This was a structure put up in the normal French manner with a functional specification, and the contractors were asked to produce a tender comprising design and construction. Freyssinet, it appears, was busy at that time and he dashed off a sketch on the back of an envelope and passed it to his staff to price. He got the job; his price was about half that of the nearest competitor. This alarmed him. He had 'bought it' by now and, in consequence, he maintains, he has never devoted so much attention to the absolute minimum cost of construction as on that job. He started off by paring his material down and he then proceeded to so trim, so adjust, so dispose of his various members, that the absolute minimum of labour was needed. No other structure, he maintains, in all his career has been so subjected to ease and economy of construction. The result was singularly impressive. Even people who came to see it with a hostile bias ready to assert that its reputation was exaggerated could not fail to be impressed. Here you had a powerful aesthetic effect arising from an intention which was purely one of convenience and economy carried to the absolute limit.

It is, I maintain, a misconception that the intention to produce an object of pleasure and success in fulfilling that intention are necessarily linked in any way, and if it be true that engineering is an art employing science in the construction of objects of utility, commonly severely cramped by considerations of cost and of ease of construction - even, in many cases, by the mere possibility of construction - one finds a parallel between engineering and what are usually called folk arts. I am thinking of the tools, the implements, the carts, the boats, the things which were produced by the peasantry of past centuries, when a mistake leading to collapse meant ruin, and too much material or elaboration meant that you went hungry for a while.

There is a great deal in common between the products of these arts, and what we might call the folk art of the 20th century, equally anonymous, almost equally communal.

Hangars at Orly Airport



Cliché Aéro

Mr Ant...
and Ger...
asked t...
Mr Han...
let us a...
looked e...
be shar...
good fo...
he exp...
which...
particul...
myself...
conclus...
of the r...
I wo...
across

RIBA JOURNAL FEBRUARY 1961



Spekland Road Goods Shed, Liverpool
British Railways (Midland Region)
105-ft. span Portal frames at 20-ft. centres.
Consulting Engineers: A. J. and J. D. Harris

Because although it is true that an engineer signs his name to a conception, to a design, this design is nevertheless realised by a vast body of men and relies upon a vast field of invention and achievement elsewhere. It is truly a communal achievement.

It is also true that the score is about even between those who over this last century and a half have been doing their best to produce works of beauty and those who have been doing their best to produce works of utility – if you like, the architects and the engineers – in defacing and in enhancing the face of the land. Both have their monstrosities, both have their triumphs. The curious thing about works of engineering is that they usually have to wait 50 years for appreciation. I look forward to 50 years ahead and I have no doubt that some preservation society will be agitating for the maintenance of those fine old mid-century motorways.

Finally, I think the true distinction is not between the engineer and the architect, but between design and analysis. I suppose, to be symmetrical, one would call them synthesis and analysis. Analysis is that function which breaks things up into their parts, so that one can obtain detailed and precise knowledge of them. Synthesis is that which puts things together, imposes form upon matter, a sort of creation. I think that this distinction is one which cuts right through both of our professions. We both have our analysts, we both have those who put things together, those who design, who create and build. Indeed, I am tempted to wonder whether the difference between the engineer and the architect is not primarily institutional.

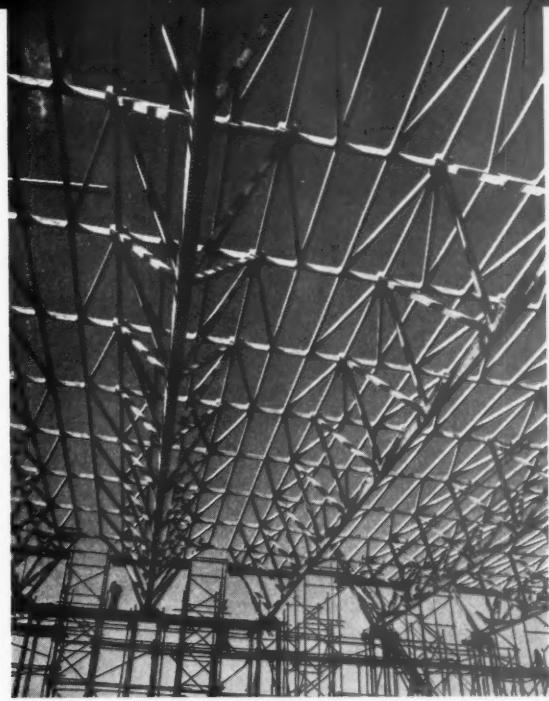
VOTE OF THANKS

Mr Anthony Pott [A]: Mr President, Ladies and Gentlemen: It is a great pleasure to be asked to propose this vote of thanks to Mr Harris for his racy talk. I think he has let us architects off rather easily. I had looked forward to a rather embarrassed evening – an embarrassment which might be shared with others who have had the good fortune to work with him – while he exposed the frightful misconceptions which he had found to be held in our particular office. Far from that, I find myself in general agreement with his conclusions, though I differ from him on some of the reasoning by which he reaches them.

I would liken his talk to a spanking walk across extremely interesting country, and

after panting along to keep up with him I was glad to find myself with him at the end. But on looking back, I wondered if he had been quite as sure a guide on the way as he seemed to be. We seemed to be getting into quite difficult places at times, and I wondered whether his skill at extricating himself and us was the result of the interest in conjuring which he showed. As an example, soon after the start, I thought that we were getting into a rather boggy patch when he said that engineering was an art and not a science. Surely it is a blend of art and science. Lethaby said 'Science is knowing and art is doing'; and 'The art of shipbuilding is the science of shipbuilding in action'.

Later Mr Harris went on to contrast objects of utility and objects of delight. Really I do not believe that we can make this distinction. The good architect or good engineer is doing his best to produce an object of delight which is also an object of high utility. I think that Mr Harris supported this when he went on to say that even in the engineering world if something is produced which is really beastly to look at the man responsible is told to take it away and try again. In short the good engineer is not content to rely on the application of his science as far as it goes and then to let things take their own course. As Mr Harris said, engineering is an art as well as a science and when the engineer



Hangars for Messrs Transair, Gatwick.
105-ft. secondary beams at 20-ft. centres.
Designers: London Ferro-Concrete Ltd in association
with A. J. and J. D. Harris.
Architects: Clive Pascall and Peter Watson [F/A]

Arnold School, Nottingham, built in Laing-span
structural system, developed in association with the
Ministry of Education.
Consulting Engineers: A. J. and J. D. Harris.
Contractors: John Laing and Son Ltd



has no other guide to help him in making his decisions he uses his eye; and that is why the good engineer produces sensitive objects of utility which are also objects of delight.

His conclusion, as I understand it, is that architecture and engineering are the same kind of activity, both relying on art and science. In particular cases the proportions of these two ingredients will vary, but in essence both engineers and architects are working for the same end with the same means.

I have very much pleasure in asking you to give a most hearty vote of thanks to Mr Harris for his talk.

Professor A. W. Skempton, DSC, MICE: Mr President, Ladies and Gentlemen: I know quite a number of people who are able to display during their daily work and conversation a measure of common sense. I also know a certain number of people, but perhaps a rather smaller number, who can display imagination. Rarely have I been able to find anybody who could display simultaneously common sense as well as imagination. We have tonight in Mr Harris just such an individual.

When put bluntly, out of its context, the statement that engineering is an art and not a science, sounds silly. But on the other hand there is much nonsense talked today about the scientific aspect of engineering, particularly of structural engineering, and so much time is wasted, for example at many of the universities, where it is not even realised that there is the alternative suggested by Mr Harris, that many of us must be extremely grateful to him for putting this point so clearly and forcefully.

The simple fact of the matter, as I see it, is that in nine cases out of ten advanced mathematics will only help you, at the end, to do a bit of refinement from an economical point of view. There is a clear illustration of this in the Dome of Discovery designed by Mr R. Tubbs. He got the design approximately correct in his first sketches. Immediately afterwards Gilbert Roberts took Tubbs's design to the point where it could be safely constructed. Several months after the Dome was built, the rigorous calculations were completed, and showed that small savings might have been made.

Mr Harris's lecture was given at the wrong place. He ought to have been talking at the Civils tonight, for in my opinion he was speaking to the converted. I am glad to see that there are some engineers here tonight, and I hope this lecture will be printed so that we can all read it.

I offer an academic footnote about Leonardo before making one criticism. I agree that Leonardo's aeronautics were nothing more than extremely brilliant shots into the future, but he was from time to time very busy as a canal engineer, and during the period 1494-98 he actually constructed the Naviglio di Milano, with the first mitre lock-gates.

My main point of criticism can be illustrated by the example of the hangars at Orly. I had the impression that Mr Harris was trying to imply that if you seek, with a great deal of knowledge, the most economically possible solution, the result will probably be a very striking and beautiful structure. In this case that was true, but I think as a general principle it is a

non sequitur. I would say that, as a guide to those who are less inspired than Freyssinet, it might be dangerous. As engineers we are in this awful position: are we to be folk artists (in Mr Harris's phrase) or are we to be self-conscious and try to produce the most beautiful design we can? This is an important question to which I think we have not heard the answer tonight.

Nevertheless, the lecture has given us a great deal to think about and I have thoroughly enjoyed it. I thank you very much, Mr President, for asking me to be here. It therefore gives me great pleasure to second this vote of thanks.

DISCUSSION

Mr J. Granger-Taylor [A]: It is a great pity that we have not had any illustrations tonight, because the only work of Mr Harris with which I am really familiar is the Transair hangar at Gatwick. It is a very beautiful piece of construction and shows that Mr Harris is himself undoubtedly an artist, and it illustrates the point he was making about craftsmanship in the use of materials. To me it was a revelation to see the space frames made up of pre-stressed concrete, where the members are so thin that if you walked into the place, and if your attention was not drawn to the roof, you might think it was made of aluminium. When Mr Harris's talk is printed could it be illustrated with one or two examples of his work?

Mr W. G. Howell [A]: I was struck by what Mr Harris said about the relationship in his field between concept and analysis. Conceptual thinking is a thing we are all embarrassed about as architects, because we feel that we must be up-to-date and scientific, and are embarrassed lest we be labelled Formalists if we admit that we had to evolve some concept at the beginning of the job to which we could relate our analysis. I was delighted to see in the RIBA JOURNAL the other day Reyner Banham's definition of Formalism. He said that formalism is anything you don't like the look of, which you therefore suggest was produced by dishonest thinking.

All our job of designing is, in fact, a battle between the concept and the analysis. When one starts on a job one cannot feed the facts in at one end, turn a handle and expect Parthenons to come out at the other end. One has to have a concept of the building one is going to put together. One cannot arrive by the additive method of putting rooms together and draping them round a circulation diagram. As one goes on checking and re-checking every aspect of the programme - economic, scientific, the user's requirements - one may find that the original concept was the right one. I have never quite found myself in this happy position, but one day one will find that the glorious vision is filled in as one checks against every aspect of the programme. However, what usually emerges at the other end is quite different from one's first guess. Indeed half-way through one generally finds that one has made all sorts of wrong assumptions at the beginning and one has to start again.

Mr Harris made a useful point about the aesthetic motive. I am not sure that

Professor Skempton did not get his *non sequitur* wrong. I understood Harris to say that because somebody is concentrating on the economic aspect only, it does not mean that what he produces will not be beautiful. I have often thought that a parallel here could be found in the realm of sport. For instance, the activity of an accomplished soccer player kicking a goal undoubtedly has an aesthetic aspect. If, however, he bases his performance on taking thought about the aesthetic content, he will not only miss the goal but possibly also the ball. Architects often do this, and it is possible than engineers do it as well.

Mr R. S. Jenkins, AMICE: One of the things Mr Harris said I thought might lead to another misconception. He described how for an engineer in the first place there must be a shape, with the analysis or the model testing coming later. Of course anyone can do that, and a lot of architects have done it and do it. In the case of shells, this can lead to rather bad shapes from a structural point of view, although they may be aesthetically pleasing to some people.

I believe that engineers are somewhat responsible for architects and others thinking that they can make things of rather fantastic shapes. Simply because some engineers are engaged on a generalised analysis for a shell of any shape, it does not mean that all shapes of shells are structurally sensible and economically built. I think that an engineer, in dreaming up a shape, is using at the back of his mind a thing called intuition, but this is really based on experience, his previous analysis of other shapes, which gives him a large feeling of what forces are present and the sort of thing described as stress load and how it will act.

Mr H. Werner Rosenthal, DIP.ING. [F]: May I ask Mr Harris if he agrees that there may be a few fundamental principles which apply to any material?

I realise that, while all architects profess an interest in 'structure', 'theory' is regarded with little favour.

The previous speaker referred to architects' conceptions of form which often lead to new forms. Should this conception of new forms not be guided by some understanding of theoretical principles? So if I may trespass for a moment on what might be the engineers' province, here are some of the principles I have in mind:

1. Forces should be brought down to earth the quickest possible way. Any 'detour' leads to additional stresses and hence often to extra cost. Such detours include cantilevers, buildings on piloti and our old friend, the 'point-load'.

2. A familiarity with the triangle of forces. This can go a long way towards understanding the run of forces and induced stresses.

3. An instinctive feel for the distribution of bending moments. Their influence on structural form is of paramount importance. As an illustration I would like to mention the inspired form of the roof to Rome Station.

4. There is what I may call the 'span-load' relation. This affects design decisions in many ways and can be expressed in simple mathematical relations, which,

incident
matics
mathem
should
presenta
For exa
increase
deflection
effect o
very sh
shape o
Finally, t
elusive co
More tha
the shape
i.e. the rig
square o
A famil
as these
enabling u
conscious
herent ec
the basis o
of Samuel
us, uttered
from design

Mr R. J.
are getting
we lose th
as an eng
of money,
not matter
and this
architects
in a rather
achieve a
structurally
honest to

Mr W. A.
if it is a
misconcep
matics is
standing o
lately clea
at his ans
explicit. A
rather a p
of architect
number w
views of e
an aid to
grasp of t
the essentia
ideas?

Professor
follow th
like to pu
that engi
years has
than it w
engineer's
and, secou
of materia
so - has
was a qua

Professor
London):
for the tra
I should
years has
content o
design, a
inevitably
course, ke
of recurre
However,
emphasise

incidentally, show an aspect of mathematics in structure, namely that a mathematical relationship or 'formula' should be regarded as a 'short-hand' presentation of structural happenings. For example, that bending moments increase with the square of the span and deflection with the fourth power! The effect on depth of structural members is very apparent and affects even the shape of such members as shells.

Finally, there is an understanding of the elusive concept, the moment of inertia. More than anything, this concept affects the shape of structural members as such, i.e. the rigidity of a section grows with the square of the depth.

A familiarity with basic principles such as these may go a long way towards enabling us to design with a certain stress consciousness and understand the 'inherent' economy of structures which is at the basis of good design; and in the words of Samuely, now unhappily no longer with us, uttered in this very hall, guide us away from designing 'anti-stress'.

Mr R. J. M. Sutherland, AMICE: Here we are getting to the dangerous point where we lose the meaning of economy. To me, as an engineer, economy is a question of money, and economy of structure does not matter a damn. This is absolutely vital, and this is where both engineers and architects go wrong. May I sum this up in a rather complicated sentence - If to achieve a given effect it is cheaper to be structurally dishonest, then it is much more honest to be structurally dishonest.

Mr W. A. Allen [A]: May I ask Mr Harris if it is a valid conception or an invalid misconception that knowledge of mathematics is really essential to the understanding of structure? He was not absolutely clear. He was rather broadly hinting at his answer to this question, but was not explicit. As you know, sir, it is becoming rather a point of interest in the education of architects, and I think that quite a number would be interested to know the views of engineers about this. Is it merely an aid to quantifying the forces to get a grasp of the order of events or is it actually essential to the understanding of structural ideas?

Professor Robert H. Matthew [F]: May I follow that by another question? I would like to put this to Mr Harris: is it not true that engineering education of the last 25 years has got very much more mathematical than it was; that the time spent in an engineer's curriculum today on, first, design and, secondly, learning about the nature of material - which is the basis, and rightly so - has also got very much less than it was a quarter of a century ago?

Professor A. D. Ross (King's College, London): As one who has a responsibility for the training of civil engineering students I should say that the tendency in recent years has been to increase the analytical content of our courses, and instruction in design, as we understand the term, has inevitably been reduced. This trend is, of course, kept under review and is the subject of recurrent debate in academic circles. However, it is generally the objective to emphasise the scientific aspects of civil

engineering while ensuring that the student is not wholly unaware of the practical applications for which he will require further training after leaving the university.

I was interested in Professor Skempton's remarks and I agree that this paper might well have been presented at the Institution of Civil Engineers since much of it would arouse comment there as well as at this Institute.

Mr Harris remarked that if an engineer made a mistake he was more likely to make it later in life rather than earlier, and I found this interesting because I imagine there may be parallels in other professions. For example, a brilliant young surgeon may perfect a highly successful procedure for which in due course he becomes renowned. Many patients seek and benefit from his skill and as the years go on, honours are showered on him and there are many calls on his time and effort. But with lapse of time a new and improved technique is developed with an increasing success which cannot be ignored. Now if our celebrated surgeon decided abruptly to practise the new procedure without adequate forethought and preparation, because of extreme pressure of work, a dangerous error could occur. Fortunately our surgeons are not only skilful and busy, but they have high professional standards which help to prevent such errors.

There may be an analogy to this in the case of engineering because new materials and new techniques are constantly appearing and if they are not used in the correct way and after careful study, mistakes can occur.

Sir, I am grateful for your invitation to hear this lecture which I have greatly enjoyed.

Sir Allan Quartermaine (Past President of the Institution of Civil Engineers): At this late hour I shall merely say that I came here myself under a misconception. Obviously the title of the paper should have been 'Engineers' Misconceptions of Engineering', as Professor Skempton has said.

I have been most intrigued by what Mr Harris has been telling us, particularly when he started with the statement that engineering is an art, having myself listened for some hour or more to a case which the Institution of Mechanical Engineers were fighting and which ultimately went to the House of Lords. It all turned on the question of whether mechanical engineering was an art or a science, and they lost because it was reckoned that under the basis of their charter engineering was not a science. To that extent I accept Mr Harris's remarks.

One thing which has been of interest to me in recent years has been the manner in which architects can produce forms for engineering works and engineers can translate those forms into reality by finding ways and means of designing to that particular form; a form which the engineer himself would not, in the first place, have thought of adopting. In other words, the form, the element of design, has come out of the architect's mind and what I am pleased to term the scientific design has come out of the engineer's mind.

This brings me to the point that the word 'design' as used by architects and engineers is often one which causes a lot of pain on both sides. Certainly it does this

to the engineer when he sees what he thinks is a beautiful engineering structure designed by himself referred to as designed by the architect. That is because the architect has done much towards creating the form of the structure, whereas the engineer has succeeded in creating the structure of that form in a safe manner.

There is only one word we both want to understand clearly, I suggest, and I hope we shall do so. That word is collaboration.

Mr Rosenthal: May I add one further question following up on a previous speaker who took me up on my remarks on 'economy', by saying that this is something often far removed from stresses and structural honesty.

Are there not two forms of 'economy'? One which can be expressed in pounds, shillings and pence, which is cheapness arising out of labour cost, availability of materials, etc. I am not concerned with this at all. The other is an 'inherent' economy based on a correct interpretation of the laws of nature. The more we know about these and design accordingly, the more the gap between these two will narrow.

For instance, the shell was once very expensive. It is now a very competitive structural form and is a form which is structurally right.

Mr Clive Pascall [F]: Even though he is always armed with a pinch of salt, Harris practises what he has preached tonight. The only thing I missed was seeing the pipe in his mouth and hearing him say under his breath, 'It can be calculated, old boy, if it must'.

The President: I will now ask Mr Harris if he will reply to the numerous questions, and perhaps I might add one very small one of my own. Like Professor Ross, I was particularly interested in the remark that a large number of engineers met disasters late in life, and Brunel was mentioned. It occurred to me that Brunel had disasters almost all through his life. It was not merely the case of the brilliant surgeon who started to experiment late, but also the fact that often he pushed things to an extreme with which his contemporaries did not agree. One thinks of his first tunnel, of the vacuum railway and, finally, the greatest disaster of all in ordinary human terms, the Great Eastern. It would be interesting to us, Mr Harris, if you could elaborate on that point. Before doing so, I am sure, Ladies and Gentlemen, that you would wish me to put to the meeting the motion for the vote of thanks, which has been moved by Mr Anthony Pott and seconded by Professor Skempton, so that we can record our thanks to Mr Harris.

Mr Harris: There have been many searching questions, and if it be true that I came here to provoke you, I have in fact been provoked. I will not deal with the speakers one by one as the questions fall into two or three groups which can be dealt with *en bloc*.

On the question of drawing by eye, the first thing to be said is that there is nothing else we can draw by. I would like to be a little formal and classical and philosophical here. We have already defined art. There are those who say that art is a virtue of

the intellect, and by virtue they mean a habit of right action. This means that if you are going to draw by eye you must have discipline and training behind you to produce this virtue, this habit of acting aright. Anybody can sketch a building; it will be good or bad according to the skill of the sketcher. Mathematics, I would maintain, is an essential part of that training, that discipline producing that skill.

It is a long time since there ceased to be many illiterate in this country. I would like to think that we do not have long to wait before there is nobody who is innumerate, as it were. The language of figures, which is in itself a form of logic, is exceedingly rich, and I would maintain that while not everyone who learns to write is capable of becoming a Shakespeare, that is no reason for not learning to write. Similarly not everyone will be an Einstein or a Poincaré, but that is not a reason for not knowing some mathematics.

A state of innumeracy – I trust this phrase does not fall too unkindly on your ears – is a state which is comparable to the state of illiteracy and is an equally unfortunate condition to be in. Certainly mathematics in themselves are a first-class means of producing that sub-conscious

ruler at the back of the mind, that guide, that discipline which builds the ability to design by eye. This was expressed crudely by one of my professors, who maintained that maths were training for guesswork.

On the question of true economy, I fear that I do not care much for any of the principles of building listed by one speaker. I do not disagree with them, but they are not generative, they have nothing that is seminal. There is too much easy knowledge about structures being purveyed. I am reminded of some of those fervent little books which tell you how to be the perfect husband. They are full of unexceptionable principles and first-class sentiment; in fact they contain good solid stuff, but in practice they are of no use to anybody.

As regards economy of structure, while I agree with Sutherland that you may be most honest when you are dishonest, I also feel that the architect and engineer are entitled to walk, metaphorically speaking, to the edge of the pier and throw their watch and chain into the water – at least they know where it is! They are fully entitled to use a solid gold girder if they are getting value for their money. The one thing which they are not entitled to do is to walk around with a hole in their pocket

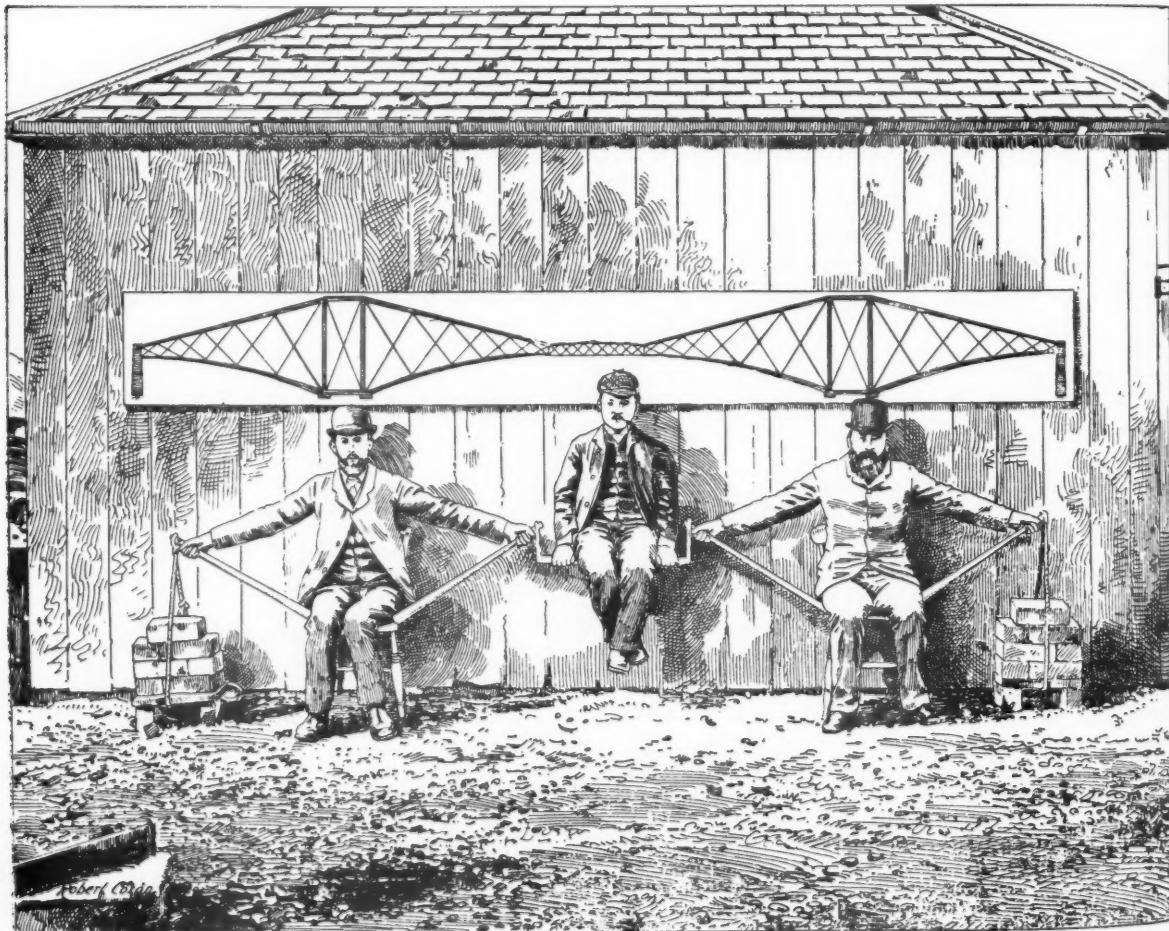
through which the client's money is steadily trickling away.

I know a startling instance of these rather more theoretical approaches to structural economy. A friend came to me and said, 'We have ten acres to cover. Spans about 40 ft. by 50 ft. In the tropics and no heat insulation is needed. Now what would you say was the mathematical expression of the ideal shape of the roof?' That is not the way in which one tackles these things.

Well, sir, I have come to the end. I leave Brunel. He did indeed have a lot of trouble, but so do many engineers, and the more they stick their necks out, the more trouble they commonly get. He got through most of his difficulties – until the last one which killed him.

As far as folk art and beauty are concerned, I fear that all one can say is that this deep, innate conviction that there is an ideal structure in which everything is worked out right, suiting its function, suiting its material, suiting the conditions of its manufacture, *ignis fatuus* though it may be is nevertheless the sort of inspiration to which most engineers, if cornered for three hours of interrogation, would, I think, admit.

Tailpiece (for which Mr Harris is entirely blameless).
A living model of the Forth Bridge, devised by Sir Benjamin Baker in the '80s, to show the manner in which the principal stresses in a cantilever bridge are distributed.



The Architect's Approach to Engineering in Tall Buildings

By Sir Thomas Bennett, KBE [F]

Extracts from a paper given on 6 December at a Joint Meeting of the Royal Society of Arts and the Institution of Plant Engineers, with the Rt Hon. Lord John Hope, Minister of Works, in the Chair

In the first part of his paper, Sir Thomas outlined the general issues which building high involved, and showed slides. He then went on to consider the various services, and it is this part of his paper that is given below:

Lift Service

There is a recommendation in this country that banks of lifts which are two-sided should be open to access only from one end, thus preventing passage through the lift halls, but it is common practice in America for such banks of lifts to have exits from each side directly into the general working halls previously referred to. It would appear therefore that no rule with regard to double-sided lift halls can be laid down. So far as single-sided lift halls are concerned, it is recommended that the maximum length of a bank of single lifts should be the length of four lifts. If the bank is longer than four it is extremely difficult for the waiting passenger to move rapidly to the lift which is stopping at his floor unless the waiting time at each stop is unduly prolonged. The same effect is produced if a corridor is planned in the centre of the lift bank, and the total length of the bank is therefore four lifts plus a corridor.

Alternatively, the lifts can be arranged in groups of two on each side of the lift approach, or in groups of three or four; and when more than eight lifts are required, it will be possible to start again with a fresh group. This simple arrangement is capable of a surprising number of variations. The dimension between the lift face of opposing banks of lifts should not be less than eight feet and there is a certain amount of functional planning required if the two lift faces are not parallel, and if entrance is from the wide end towards a narrower end. The lifts can be run in duplex or triplex operation, thus reducing the waiting time during the day.

Passage is much easier if the lift cars are wide and relatively shallow, and in no case should they be narrow on the face and deep within. The number of passengers to be carried varies from 10 to 20, and in a big building heavily occupied there would, at peak periods, be very substantial movement each time the lift car arrives or departs.

The peak periods of the arrival and departure of staff vary substantially, but in the majority of buildings in single occupation, they are a quarter of an hour in length. In a building occupied by many tenants the period may be much longer. In the calculation of lift services, therefore, there should be a waiting time of between 20 to 40 seconds throughout the day; 20 seconds waiting would be excellent, and 40 seconds would be regarded as unacceptable. The 'building-emptying' time of lifts in maxi-

mum operation should be not more than 40 minutes. The emptying time for a building may be subject to many local factors. I think lift engineers are over-pessimistic about the congestion which takes place in the mornings and evenings with staff. They do not allow for the number of people who are unfortunately late, or the number who manage to jump the gun at the finishing hour, neither do they allow sufficiently for the enthusiastic workers who frequently work beyond their specified hour.

The dividing line between a single lift bank and a divided lift bank for the higher and lower floors is placed at 12 storeys, and a second dividing line at 20 storeys and a third at 20 to 30 storeys. Dividing lines of various lift banks are recommended to be as follows:

- Up to 12 floors—one bank—300/500 f.p.m.
- Up to 20 floors—two banks the top—700 f.p.m.
- Up to 30 floors—three banks the top—1,000 f.p.m.
- Up to 50 floors—four banks the top—1,200 f.p.m.

Between 12 and 15 storeys it seems difficult to decide that a second bank of lifts is justified, and in other cases administrative adjustments may be made with a single lift bank running all day, and with certain lifts taken out of circuit during the morning and evening congestion and made into high-speed lifts to serve a top one-third of the building.

It is worth while at this point to comment again on the accuracy of setting out, since for many years lift engineers insisted on having a clean lift shaft complete with lift house before they could commence the erection of the guides or other parts of the machine. In high buildings it is essential that the guides should commence from the bottom long before the lift house at the top. Lift engines at the bottom are rarely successful. Even at a height of 120 ft. rope stretch makes smooth running almost unattainable.

Floor coverings require early determination to provide for perfect landing levels, and even then it may be discovered at a late date that the client has special requirements with regard to coverings on unexpected floors where the thickness of covering varies appreciably from that of the standard.

In high flats the placing of the lifts in relation to the rooms on the flat plans becomes important, as it is virtually impossible to prevent the noise of the lift shaft penetrating into the flat. With a different type of ground floor the underruns require consideration. In hospitals the clean and

dirty sides of operating blocks could be nullified by bad lift shaft access.

Electrical Work

The major problems of electrical installation vary little from those met with in buildings of moderate height, but when very substantial heights are reached it may well be more economic to attempt to encourage the supply company to carry the main up the building and use a sub-station transformer for breaking it down to normal voltages. This would have the effect of reducing the size of the main cables which are needed. The use of long mains will follow much the same patterns as in ordinary buildings, and therefore the difference is really confined to the method by which the current is conveyed to the top of the building where the heaviest cables have to be used.

The tall building, especially the exposed isolated tall building, is more likely to attract lightning than an ordinary horizontal building. The use of lightning conductors tends to show on the sky-line, and the external tapes ruin the appearance of the façade. It is possible to take conductors in tubes inside the building and still secure a reasonable measure of protection by proper design of earth plates.

Probably electricity will affect the building more, owing to the increasing tendency to use substantial electrical equipment for administration. Heavy calculating machinery and other similar equipment may well be installed in any position, and the weight frequently exceeds the allowances for floor loading. It would seem a wise provision to make some allowance for mechanical equipment on every floor, or possibly on alternate floors with a larger area.

There is every indication that the use of accounting and other machines will grow, and one can only guess at the quantity of space which will be required for them. If the intending occupant can give precise plant plans before the drawings are made, the problem disappears so far as first occupation is concerned.

Plumbing and Sanitary Services

Unlike the electrical services, plumbing services vary substantially with increased height. It is considered ideal to store the equivalent of one day's hot and cold water consumption in storage cisterns within a building to prevent a shortage of water in the event of a breakdown of the supply services. Excessive pressure on the valves and fittings of all sanitary appliances would cause not only wastage of water and make it difficult for the user to draw off the exact

amount of water desired, but it would also increase the maintenance necessary. Cold water down services should not have a vertical drop longer than 100 ft. Therefore cold water storage should be arranged on every tenth floor or so to serve the section of the building below. Alternatively, the storage can be placed at a higher level to serve two or three sections, e.g. 20 to 30 floors, with break tanks at lower levels.

Booster pumps are required to raise the incoming water supply from the local water board's street main. They are usually in duplicate, one acting as a stand-by, and they would commence operation when 'called in' by a float switch in the high-level storage cisterns.

In some localities one is able to fix the booster pumps together with all necessary reflux, recoil and isolating valves on a by-pass to the incoming main, which would be continued up to the storage cisterns without a break. Such an arrangement makes use of the existing pressure in the incoming service, which in the MWB area may well be 80 to 100 ft., and the booster pumps only have to add to this head to raise the water to the required level. Naturally, the local water company will have to be satisfied that the pumps are not too powerful – not able, that is, to fill the storage cisterns within an unreasonably short time, thereby depriving the adjacent properties of their supply.

In other localities – and this is generally the case where the water supply is restricted or intermittent – a break tank has to be provided from which the required water is pumped.

The size of soil stacks, and indeed of branches receiving the discharge from several fittings, must be carefully calculated on the basis of the likely incidence of use of the fittings which are connected to it. There is a constant danger that during heavy use, air compression may occur within these stacks, particularly at changes of direction, or a partial vacuum in any straight length of pipe. Generally speaking, each soil stack has its companion anti-syphon stack to which periodic relief connections are made to overcome compression or syphonage (which may otherwise result in considerable nuisance) and to stabilise the pressure conditions in the stacks. The bottom of the soil stacks, where they discharge into horizontal drains, should be installed in long radius curves to facilitate an easy and swift flow and to prevent compression.

The sanitary fittings on the lowest one or two floors are usually taken separately into the drain instead of being connected to a tall stack. This is to avoid an overflow from a build-up in the bottom part of the tall stack. Fittings positioned immediately above an offset in the stack are similarly treated and would be connected below the top of the offset where compression may occur.

Low-level car parking areas, basement or sub-basement plant rooms, staff toilets, etc., may be below the flood level of the public sewer, and their effluents would have to be discharged into a closed-in sump or into a series of closed-in containers whence they would have to be pumped or pneumatically lifted into a higher-level party drain. Special precautions must be taken where the greasy effluents from canteens are concerned.

Hydraulic Fire-Fighting Services

The details of the hydraulic fire-fighting services will depend on the requirements of the local authority and, apart from 'first aid' appliances, are designed to supplement the facilities provided by the local fire brigade.

In buildings which exceed in height the level which can be reached by the fire brigade's turntables, dry or wet risers must be installed. In London this height is 80 ft. A dry riser is merely a vertical pipe run up the building with an open inlet at street level and an outlet valve on each floor easily accessible from the staircase. In the event of a fire the fire brigade would connect their pumps to a street hydrant point and to the dry riser inlet in order to raise the water to a higher level where their hoses can be connected to the staircase outlet valves.

When the height of the building exceeds the level to which the local fire brigade can at all times raise a satisfactory volume of water at a suitable pressure, then wet risers must be installed. In London this height is 200 ft. Wet risers are vertical pipe-runs up the building with outlet valves on each floor like the dry risers, but having permanent connections to a reliable water supply instead of open inlet points. The source of this supply will vary with local conditions. Where there are two separate street mains available (two in case one supply should fail), the connections may be made to these.

Where the water supply may be scarce or intermittent, water for fire-fighting purposes would have to be stored in the building. Two sets of automatic booster pumps must be provided to ensure a plentiful supply of water at all levels at a rather high pressure, one set to be powered by electric motors, the other to be a diesel-powered set with battery-operated start as a standby in the event of electrical failure.

Hydraulic hose reels are an efficient and convenient means of fighting small fires. They are always charged with water under pressure which is automatically maintained by booster pumps. The hose end nozzles can be pulled up to 100 ft. to any fire, and a jet of water firing up to five gallons per minute can be aimed at the fire. They must be sited in such a way that small fires in any part of the buildings can be tackled.

Automatic sprinklers are normally only provided in very large storage areas, in car parks within buildings, because of the danger due to petrol or in places where highly inflammable goods are stored.

Gas

Gas is one of the services which does not present any additional problems in tall buildings. As 'town gas' is lighter than air, it will rise in the pipes when draw-offs are opened, and the frictional losses due to longer pipe runs will be more than offset. Apart from cooking, water, space and central heating, gas is increasingly used as fuel for toilet incinerators in office blocks. The appliances can now be fixed to one common flue having an industrial type extract fan, and are provided with flame and flue failure controls to guard against all eventualities.

Heating and Ventilating

The first problems connected with the heating and ventilating services arise from

the fact that in tall buildings, especially those rising above 200 ft., the pressure of the wind on the outside faces and the force of the wind when windows are opened, produce quite exceptional problems of heating and ventilation. The wind pressure will appreciably change the temperature between the windward and leeward sides of the building. The difficulties of opening windows and securing adequate ventilation, especially when there are high winds, increase very largely the desirability of providing artificial ventilation and almost turn it into a necessity. If the windows of a high building are side hung, it is almost impossible to prevent times at which all the papers in the room are blown across it without warning, and frequently opening a window will produce these extremely uncomfortable conditions. Attempts to throttle the opening lead to whistling noises.

If artificial ventilation is accepted as a *sine qua non*, the question of accommodation for plant becomes of the greatest importance: the plant for full air-conditioning of the building will be expensive and heavy, and because of the need for enclosures for the lift banks and water tanks, it is almost certain to be placed at the top of the building. If this is the case, the engineers must provide for substantial additional loads. In some cases, however, a whole floor is set aside at a lower level to provide accommodation for the plant in such a way that an automatic break in the full water pressure is obtained. As in the case of the plumbing services, the hot water and heating services must have a break in the head of water, and this is normally necessary above 120 ft. The pressure head affects both the boilers and the radiators, and would mean that in each case steel must be substituted for cast iron.

Excessive draught and difficulties of water pressure add importance to the value of a system of artificial ventilation, and as increasing progress is made in connection with high-pressure delivery and its accompanying advantage of smaller ducts and other spaces, the distribution of heat by means of hot air instead of hot water becomes more and more valuable.

If straight heating costs 5s. per sq. ft. heating plus ventilation may cost 10s. to 15s. per sq. ft., and air-conditioning may cost 20s. to 25s. per sq. ft.

In any case, the substitution of background heating for full heating by means of water, and completing the heating by air, becomes a combination worthy of increasing study. If the whole of the heating plant is situated on the roof, calorifiers or other means of breaking down the pressure will be needed at each 100 ft. level below the top.

In certain cases consideration can be given to boiler houses on the roof. These have other advantages in connection with the saving of space (possibly extremely valuable) on lower floors, but involve fuel raising to high points unless the boilers are to be fed by electricity.

Up to the present, extensive heating by electricity has not shown itself to be possible, as off-peak loads cannot maintain a temperature throughout the day without a substantial day boost or excessive storage, both of which are expensive. If nuclear energy plant produces electricity more cheaply than the comparable rates for gas, oil or solid fuel, it is obvious that it will immediately create a demand for electric

heating plants and revolutionise a great deal of the heating problem. In any case, it must be accepted that board-rooms, directors' rooms, laboratories and other special rooms in high buildings almost of necessity demand air-conditioning, and this will include refrigeration. In high buildings, the top floors facing south and west may well provide working conditions intolerable in the hottest weather, thus adding further weight to the argument in favour of universal artificial ventilation.

The hot water installation will involve much the same problems of the breaking down of pressure as cold water, with special attention to mixing valves to see that the pressures are approximately the same. A certain number of the hot water problems may be solved by attaching localised hot water heating units to the cold water

system, thus using gas or electricity in the form of heating units in each lavatory on each floor.

Cooking equipment and the kitchens of all high buildings are at the top, thus eliminating most of the problems of plumbing and hot water heating, as well as eliminating the smells which arise.

All high buildings require studies of their insulating properties to a much greater extent than is necessary in the case of buildings of moderate height, and this study of insulation is intensified if the building is to be faced with glass aprons, plastic or other thin materials of poor insulating value. As the height increases, double glazing and other similar protection against solar heat and cold become justifiable, and once a complete heating and artificial ventilation scheme has been

accepted, saving in running costs resulting from good insulation will be substantial, and may reach 20 to 25 per cent of the total estimated figures. I think it is highly probable that many buildings at present under construction will prove to be unsatisfactorily insulated when they are brought into use. The heat loss on the top floor of one of my own buildings proved to have been calculated to allow for only about half the heat loss which was ultimately experienced in mid-winter.

Much heat is produced by electronic computers, machine accountancy systems and automation generally. These are becoming increasingly common. Air-conditioning can remove such heat and maintain satisfactory atmospheric conditions for work to continue at maximum efficiency.

Evidence by the Royal Institute of British Architects to the Committee on the Future of Sound Broadcasting and Television

Introductory

The RIBA has been deeply interested in sound broadcasting and television since their inception. The Council of the Institute has a Sound Broadcasting and Television Sub-Committee, of which Sir Hugh Casson [F] is chairman, which aims to maintain contact with and to offer suggestions for programmes to both the BBC and the commercial television companies. The Committee is, therefore, familiar with some at least of the problems being considered by your Committee.

There are three reasons for the RIBA's interest in this subject. The first is that the RIBA is a learned society, concerned with the advancement of Art and Science and with the raising of the level of education and culture, and an educational body, responsible (through the Board of Architectural Education) for the control of architectural education. The second is that the quality of our physical environment - buildings, the spaces around and between them, landscape in town and country - is of immense and growing importance. The third is that the efficiency of the building industry, in which architects play a key role, fundamentally affects our national prosperity.

Architecture and the Environment

Although Britain has an unrivalled heritage of beauty in many of our towns and cities, this is today overshadowed by the grim legacy of ugliness and inconvenience inherited from the industrial revolution, by the congestion of town centres, and by the

vast, sprawling squalid mess known as 'Subtopia', that has been allowed to proliferate in recent years and is still doing so. The reconstruction of large parts of our existing towns and cities to make them function efficiently, and to provide an environment for a good life, is possibly the greatest single domestic task facing the British people in the next 40 years. Yet the public is only dimly aware of this fact.

The advancement of architecture and raising the quality of the whole physical environment are severely handicapped by this widespread ignorance and indifference. All experience shows that good architecture, whether on the scale of the individual house or a design for a new town, depends to a large degree upon a sympathetic and understanding public. The RIBA is convinced that if the nation is to succeed in the challenging task of banishing ugliness, inconvenience and inefficiency from our towns and cities its architects need an informed and critical public opinion, not merely to support architects but to criticise them intelligently, and, above all, to demand something far better than people are now prepared to accept. There is no more powerful medium than television for creating this informed and critical public.

The Building Industry

Building is our most important industry. It had an output of £1,641 million of new construction in 1959, which was almost exactly double the output of the motor industry. On the quality of our buildings,

the efficiency of their layout and their economy in use, depends our success as an industrial nation and the well-being of our people. The speed and efficiency of construction in the building industry largely determine the scale of the nation's capital investment. Unfortunately, despite the attainment of a high level of efficiency by some of the leading firms, the building industry is one of the least efficient in the country, with the result that there is an enormous loss of potential output. There are deeply-rooted conservative attitudes, particularly among the small firms, and an urgent need for a fuller understanding of the advantages of modern techniques and materials. Moreover, the layout, design and appearance of an enormous number of buildings, particularly houses, are of a pitifully low standard. The RIBA is convinced that television is an unrivalled medium for stimulating the interest of the entire building industry and of the public in better building and better methods. The nation cannot afford to neglect the use of either television or sound for this purpose.

Sound Broadcasting

The RIBA continues to attach considerable importance to the further development and improvement of sound broadcasting, despite the expansion of television. Many talks, even including some talks on visual subjects such as architecture, are more effective on sound, and there are obvious advantages in the field of education, culture and information to be derived from an extension

of local broadcasting. Many of our later comments on the future of television apply in principle to sound broadcasting, which in our view should remain a public service. It does not necessarily follow that it should remain a monopoly of the BBC.

Architecture and Television

Today the interest of the RIBA is primarily concentrated on television, because architecture and building are best discussed and explained when they can be visualised. The introduction of colour, together with improved definition, will enormously enhance the interest, value and quality of television in the treatment of the physical environment.

The RIBA appreciates the co-operation it has received in the past from the BBC and, to some degree, from the commercial television companies. There is, however, a marked difference between the news magazine programmes (such as 'Tonight') which are eager to feature architecture when it is in the news, and the feature programmes where even the BBC has tended to adopt the attitude that 'Architecture' is a difficult, if not impossible, subject for television. This attitude, we believe, springs mainly not from any inherent difficulty in the subject, but from two other factors. One is that some programme directors and producers share the misunderstandings and indifference of the public. (The mistaken idea, for instance, that architecture is *only* concerned with the appearance of a building is widespread.) The second is that programmes at popular viewing times are directed at mass audiences, for which television programmes on 'Architecture' (as it is conceived by the producers) are deemed insufficiently interesting. Even where a programme, such as the BBC's 'Monitor', is directed at a minority public late in the evening it rarely deals with architecture, although it gives a great deal of time to the other visual arts and artists. Architecture, moreover, suffers very much from the fact that it straddles both art and science, and tends to be ignored in the planning both of art and of science programmes. In reality it is precisely because architecture is the master art embracing both science and art, that it offers a bridge of understanding between the two. There seems to be a marked reluctance to invest in architecture and building programmes the sums that are lavished on science programmes. No effort is spared to make the most difficult scientific problem intelligible to the layman, but no comparable effort is made with architecture and building. Too often architecture is thought of as a dry subject, whereas in fact the romance and adventure of building an environment for every human activity can yield rich material for absorbing programmes.

Mass and Minority Audiences

The immense opportunities opened up by television have not been fully realised, due, we believe, to the pursuit of advertisement revenue and excessive concentration upon programmes intended to interest the largest possible audience. While some excellent programmes are produced, particularly for schools, the great majority of programmes are trivial. Any increase in the time given to mass entertainment programmes can only result in an extension of

this triviality and a dilution of their quality. So long as the existing networks, whether the BBC or commercial, are so heavily committed to provide popular programmes which will appeal to the maximum number of viewers they will be reluctant to broadcast a thoughtful programme simply because it is thoughtful. It should not be forgotten that the mass audience, at which the commercial programmes and to only a smaller degree the BBC programmes, are directed, consists in fact of an immense number of minorities, with specialised or localised interests. Some of these are 'highbrow', some are not. Additional television channels make it possible to cater more effectively and frequently for these minority interests and to achieve a better balance in each channel.

Educational and Cultural Programmes

So long as there are only two television channels it is admittedly difficult to do this. But the introduction of a third or fourth channel opens up the possibility above all of extending the range and the depth of educational and cultural programmes. The sound programme 'Building Matters' is an excellent example of the kind of programme which, if backed with resources on the scale put by the BBC, for instance into its agricultural film unit, could be immensely stimulating on television, and would interest an audience considerably wider than members of the building industry and the professions associated with it. In the future, as society acquires more and more leisure and a greater desire for knowledge, and becomes more concerned with the quality of its physical environment, the demand for adult educational and cultural programmes will increase, and it is certain that far more popular controversy will centre on architecture, town planning and building.

The RIBA envisages, for example, that universities and schools of architecture should undertake adult education through the medium of television just as, in the past, extra-mural departments of universities and other adult education bodies have sent lecturers to village halls. The University Grants Committee have latitude to finance extra-mural activities. If the universities have to resort, as seems likely, to the use of closed-circuit television to relieve the acute shortage of teachers in the coming period of university expansion, the basic equipment of wiring, land lines and camera equipment will have to be available in any case. The universities and schools of architecture are well distributed regionally, are uncommitted politically, commercially or in any other way. They have a tradition of independent and objective thinking. They should, therefore, be closely associated with broadcasting and television, and might well be given responsibility if not for a television channel at least for many educational programmes, particularly those emanating from local or regional stations.

The introduction of a third or fourth television channel will place a great additional strain on the limited numbers of talented men and women trained in television production and visual presentation, unless facilities for training are expanded.

Schools and Children's Programmes

The RIBA would welcome an extension of schools broadcasting, and would support

any action taken to provide all schools with television sets in sufficient numbers to enable them to make good use of the programmes provided. Local stations should be encouraged to help children to take a greater interest in their own town or locality, and to teach more about architecture and the process of building. Additional television channels should also be used to extend the range of subjects treated in Children's Hour.

Local Programmes

Local programmes will assume much greater importance as more television channels become available. People are intensely interested in towns or places in which they live. People who are not stirred by national issues become passionately involved in local architectural and planning problems that affect their daily lives, and are the subject of acute local controversy. These are just the problems that should be the subject of local and occasionally national television programmes directed at popular audiences. There is an urgent need, therefore, both for an intelligently directed national television programme, and for an alternative programme that caters specifically for minority and local audiences. The provision of subsequent channels would, of course, present still further opportunities in this field.

Control of Third Channel

The RIBA is convinced that a third or any other additional television channel, whether national, regional or local, must not be controlled by commercial interests or financed by advertising, for this would be inconsistent with its wish to see the future expansion of television as an educational, cultural and information service. The third channel should be controlled by an independent public corporation. We express no opinion on the merits of entrusting it to the BBC or to another independent corporation. Local programmes should be under genuinely local control, but buttressed against local pressure groups.

Governing and Advisory Bodies

Both in the BBC itself, in the commercial television companies and in any public corporations to be set up in future, there is need for much stronger representation of those concerned with the appearance of things. There are BBC regional councils, and advisory committees for religion, music, agriculture, science and schools broadcasting, but none for architecture, design, or any of the visual arts. No architect is included in the 489 members of these councils or committees, or in any of the advisory committees of the Independent Television Authority. This is clear evidence, we believe, of the failure to give architecture and the visual arts the importance they deserve. There is need for expert advice on architecture, building science and design to be available to the BBC and ITA through advisory committees or councils. The decisive switch from sound radio to television and the increased emphasis in future on educational and cultural programmes only underlines the importance of representation among the governors and within the BBC and ITA of people concerned with architecture and the visual arts.

al
ic
is
of
of
is,
n,
is
re,
il-
se
he
nt
ze,
are
ey
on
to
gh
he
le-
are
nes
re-
hin
ith

D

MONDAY
introduc
Architec

TUESDAY
of the J

MARCH.
Saturda

TUESDAY
(at Gre
Mr Ho

15, 20
RIBA.

N

NOTIC
Discussi
6.30 p.m.
Respon
Tuesday
(Ligh
before t

Session
General
held on
Sir Wil
President

The r
membe

The
Meeting
1960 ha
were ta
correct.

The
first tim
admitti
E. A.
Lodge,

Prize
Council
Prof

MA, FS
"Modem
the Re
ensued
Summer
Sir Jo
Dr Re
passed
The

Cessatio
of Bye
be a n
Associa

RIBA

Diary of Events

MONDAY 13 FEBRUARY, 6 p.m. Library Group. Mr Dargan Bullivant [A] will introduce an evening on *The Library and Information Service for the Practising Architect*.

TUESDAY 21 FEBRUARY, 6.30 p.m. General Meeting. Discussion on *The Responsibility of the Job Architect*.

MARCH. Michele Sanmicheli Exhibition. Monday to Friday 10 a.m. to 7 p.m., Saturday 10 a.m. to 5 p.m.

TUESDAY 7 MARCH, 5.30 p.m. Joint Meeting with the Institution of Civil Engineers (at Great George Street, SW1). *The Problem of Housing Large-Scale Plant*. Speakers: Mr Howard Lobb [F] and Mr W. S. Atkins.

15, 20 and 22 FEBRUARY at 5 p.m. Royal College of Art's Lethaby Lectures at the RIBA. See note on page 129.

Notes and Notices

NOTICES

Discussion, Tuesday 21 February 1961 at 6.30 p.m. There will be a discussion on 'The Responsibility of The Job Architect', on Tuesday 21 February 1961 at 6.30 p.m.

(Light refreshments will be provided before the meeting.)

Session 1960-61. Minutes III. At the Third General Meeting of the Session, 1960-61, held on Tuesday 10 January 1961 at 6 p.m., Sir William Holford, MA, PPTPI, FILA, President, in the Chair.

The meeting was attended by about 280 members and guests.

The Minutes of the Second General Meeting held on Tuesday 13 December 1960 having been published in the JOURNAL, were taken as read, confirmed and signed as correct.

The following members attending for the first time since their election were formally admitted by the President: *As Associates*: E. A. Alden, R. W. Hartland, George Lodge, A. W. Tyler.

The Secretary read the Deed of Award of Prizes and Studentships made by the Council under the Common Seal.

Professor Nikolaus Pevsner, CBE, PhD, MA, FSA [Hon. A] having read a paper on 'Modern Architecture and the Historian or the Return of Historicism', a discussion ensued and on the motion of Sir John Summerson, CBE, BA, FSA [A], Curator of Sir John Soane's Museum, seconded by Dr Reyner Banham, a vote of thanks was passed to Dr Pevsner by acclamation, to which he briefly responded.

The proceedings closed at 7.55 p.m.

Cessation of Membership. Under the terms of Bye-law 21, the following has ceased to be a member of the Royal Institute: *As Associate*: John Keith Robinson.

The IUA Congress, 1961. The IUA Congress, 1961, the theme for which will be 'New Techniques and Materials - Their Impact on Architecture' will be held in London from 3-7 July 1961. This will take the place of the British Architects' Conference.

The RIBA Appointments Department. Members and Students of the RIBA and the Allied Societies are reminded that the services of the Institute's Appointments Department are available to employers requiring assistants and to assistants seeking salaried employment.

Employers are invited to notify the Secretary of vacancies in their offices, giving details of the work to be done, the qualifications and salaries offered. *Special note*: Until after the Congress of the International Union of Architects in July, the Department will be open from Monday to Thursday only of each week, as part of the Congress organisation is being undertaken by the Appointments Officer. Members and Students wishing to visit the Department are requested to telephone or write in advance for an appointment. If this is not practicable, they should obtain from the Secretary an application form which when completed and returned to the Institute, will enable the Department to send the applicant particulars of vacancies suitable to their qualification and requirements, or to submit their names for vacant posts. Subject to the above limitations, the normal service of the Department will, of course, be maintained.

Publicity. The Practice Committee recommend members to see that, when writing or approving an article or descriptive note for the Press, technical or otherwise, relating to a completed building, the names of the quantity surveyor and contractor are always mentioned.

Competitions

Note. An applicant for the conditions of a competition must state his registration number.

City of Lincoln: Civic Centre. Last day for submitting designs: 7 July 1961. Full particulars were published in the JOURNAL for January, page 102.

City of Westminster: New Housing Scheme. Last day for submitting designs: 10 July 1961. Full particulars were published in the JOURNAL for January, page 102, but in addition it should be noted that *corporate members of overseas societies allied to the RIBA* are also invited to compete.

New County Offices, Reading. The Royal County of Berkshire intend to promote an architectural competition for new County Offices on a site in Reading bounded by Abbot's Walk, Abbey Street and the Abbey ruins, at a cost not exceeding £700,000.

Assessor: Mr Frederick Gibberd, CBE, MTPPI, FILA [F]. Particulars will be published shortly.

Royal Welsh National Eisteddfod, Maeor, 1961. Competitions Nos. 181, 182 and 183. All entrants must be Welsh or working or

born in Wales. Full particulars were published in the JOURNAL for December, page 62.

Design of Wooden Office Furniture. Last day for submitting designs in the first stage: 28 February 1961. Last day for the second stage: 14 September 1961. Full particulars were published in the JOURNAL for October, page 463.

Harlow Development Corporation; Competition for Houses and Flats. Last day for submitting designs: 6 March 1961. Full particulars were published in the JOURNAL for July, page 334.

New County Offices at Newtown St Boswells. Last day for submitting designs: 31 March 1961. Full particulars were published in the JOURNAL for May, page 245.

COMPETITION RESULTS

Low Cost Housing: The West Indies
Three equal premiums of \$600: Mr G. C. Hodges [4], Mr Colin Laird [4] and Mr P. C. B. Soares.

'British Paints' Special Prize, \$500: Mr K. J. Tomlin, OBE [F].

Awards of Merit, \$200: Mr J. Newell Lewis [F] and Messrs Robertson Ward Associates.

Ideal Homes: Malaya

Three premiums of \$500: Mr Norman G. Lehey [4], Mr Kington Loo [4] and Mr Fong Ying Leong [4].

Georgiades: C. P.
Grenville: P. S.
Hammond: E. A. C.
Hargreaves:
 Anthony
Haywood: Michael
Hepburn: William
Holman: L. J.
Hopwood: Colin
Horne: J. H.
Howarth: R. M.
Howe: A. J.
Hunt: D. A.
Inchley: P. R.
Jepson: J. B.
Jillings: J. H.
Jones: C. V.
Joseph: E. B. (Miss)
Kazi: A. R.
King: D. A.
Kirkland: W. J.
Knight: Bernard
Lane: H. F.
Lane: Norman
Leaman: R. N.
Lironi: M. G.
McCulloch: James
Macdonald: J. G. J.
Makris: Michael
Maynard: Peter
Meggeson: M. J.
Merrett: A. B.
Millward: K. W.
Millward: P. M.
Mitchell: A. K. G.
Mitra: P. K.
Moore: R. K.
Musa: A. R.
Murphy-O'Connor:
 Brian
Naybour: D. J.
Nicholls: P. E.
O'Callaghan: P. G.
Pawling: M. A.
Pearson: H. P.
Pratt: D. E.
Proctor: R. P.

Radcliffe: C. J.
Rae: R. C.
Ranawake:
 D. A. P. C.
Rathbone: P. J.
Rayner: J. D.
Redman: W. E.
Reid: George
Reid: W. J. A.
Rowe: E. T.
Rutherford: M. H.
Samuel: R. D.
Sanger: A. G.
Sharp: J. R.
Sinclair: D. A.
Smith: A. J.
Smith: W. P.
Snow: B. J.
Soo: Kuok Choo
Storey: T. M.
Strutt: M. J.
Thian: O. K.
Thornton: P. A.
Tonge: David
Triggs: P. D.
Tudor: R. T.
Vercoe: G. J.
Walker: A. W.
Walker: N. K.
Walker: T. E.
Ward: A. E.
Wareing: N. F.
Whitbread: N. J.
White: I. S.
Wiles: R. F.
Williams: G. J.
Williams: H. D. L.
Wintersgill: Stuart
Wong:
 Kam-Sheung
Wood: Alan
Woodburn: L. M.
Woods: P. G.
Wright-Watson:
 I. C.
Yuen: King-Yuk

General Notes

RAIC Inquiry into the Design of Residential Environment. At its Annual Assembly in Winnipeg in 1960, the Royal Architectural Institute of Canada approved in principle a report submitted by a committee of three architects who had conducted a searching inquiry into the design of Canada's residential environment.¹ In order to carry out this inquiry, the RAIC obtained a grant of \$30,000 from the Federal Government under the provisions of Part V of the National Housing Act. The report contained some 32 recommendations calling for action by architects, builders, planners and by all levels of government as well as for studies on such matters as the operating costs of various housing types and the behavioural and economic patterns of households and their divergent needs and preferences.

Following its presentation to the Annual Assembly, the report was referred to a standing joint committee consisting of representatives of the Institute and Central Mortgage and Housing Corporation for analysis and for the purpose of developing a programme to implement the 32 recommendations.

Resulting from meetings of the joint committee in July and September was the breakdown of the recommendations into six distinct categories: provincial, municipal, CMHC and Federal, architectural profession, economic studies and university. A further grouping was made to indicate immediate action to be taken on each recommendation.

Also arising out of these joint committee meetings was the recommendation, accepted by the Executive Committee of the Institute, that the services of a full-time administrator be obtained for one year to take charge of the implementation programme. As a result of this suggestion, Mr E. D. Fox, Public Housing Officer with Central Mortgage and Housing Corporation, was appointed to the RAIC on 14 November in the capacity of a special assistant in charge of the implementation programme.

At the same time a financial appeal was made by the RAIC to individual architects and architectural firms throughout the country for funds considered necessary to support the programme for one year. The objective was set at \$15,000. To date over \$10,000 have been received by the Institute and it is hoped that the objective will be reached before the end of the year.

In carrying out the implementation programme, a number of recommendations having regional and local significance have been referred to Provincial Architectural Associations for their study and analysis. Other recommendations are being treated directly by the Institute and still others are being considered jointly with such organisations as the Town Planning Institute of Canada, the Canadian Federation of Mayors and Municipalities, the Community Planning Association of Canada, Central Mortgage and Housing Corporation, the Canadian Society of Landscape Architects and Town Planners, for whom some of the recommendations have a particular significance.

Reviewed in the August 1960 JOURNAL.

Board of Architectural Education

The RIBA Intermediate Examination, November 1960. The RIBA Intermediate Examination was held in London, Plymouth, Manchester, Leeds, Newcastle upon Tyne, Edinburgh and Belfast from 7 to 14 November 1960.

Of the 405 candidates examined, 128 passed and 277 were relegated. The successful candidates are as follows:

Anand: G. S.
Atkin: Kenneth
Aylward: R. B.
Barnes: R. S.
Bell: C. S.
Bennett: D. H.
Birchall: David
Black: P. S.
Borges: P. A.
Brett: John
Brewer: Robert W.
Brewer: Roger W.
Brian: A. C.
Burjan: Imre
Campbell: A. J. C.
Campbell: J. F.
Cann: D. R.
Carey: D. E.
Carroll: P. J.
Chappell: Jeffrey
Choa: John
Church: J. M. (Mrs)
Clark: A. B. E.
Cluse: F. E.
Cossins: J. B.
Cotter: A. D.
Daley: P. G.
Davis: B. D.
Davis: L. S.
Dodd: Selwyn
Dunn: K. M.
Ellis: Ronald
Fairhead: John
Falconer: C. J.
Faram: J. W.
Farquharson: W. D.
Farrington: D. R.
Findlay: A. S.
Fleig: P. G.
Fursey: R. H.

Allied Societies

Changes of Officers and Addresses

Northamptonshire, Bedfordshire and Huntingdonshire Association of Architects. Northamptonshire Branch. Hon. Secretary, F. P. Haddon [4], 18 Cranbrook Road, Queen's Park, Northampton.

Federation of Malaya Society of Architects. President, A. A. Geeraerts [4]. Hon. Secretary, I. Hisham Albakri [4], PWD Headquarters, Maxwell Road, Kuala Lumpur, Malaya.

Hong Kong Society of Architects. President, Professor W. G. Gregory [4].

Royal Australian Institute of Architects. Queensland Chapter. Hon. Secretary, B. M. Wilson [4], 564 Boundary Street, Spring Hill, Brisbane, Queensland, Australia. Secretary, Mrs C. T. Andrew, AMP Building, Edward Street, Brisbane, Queensland, Australia. **South Australian Institute of Architects.** Hon. Secretary, F. C. Hassell, BE [4]. Secretary, R. D. Hastwell, 44 Grenfell Street, Adelaide, South Australia.

Architects
one of
the C
one day
individ
to cons
recomm
for acti
conclus
recomm
with a
presente

The
has als
of actio
to them
all, mea
issues o
builder
other o
side sta
recomm

To d
out wi
contain
report,
stabilit
10 to
implen

New S
of the
FCCS,
the Ass
Stennin
Mr F
implen



Architecture Week at Bentall's, Kingston. A view of the exhibition organised by Kingston upon Thames Chapter of the SESA as one of the ways to make people conscious of the qualities of architecture in general and the importance of the work of the members of the Chapter in particular

On 7 December the Province of Quebec Association of Architects called a special one-day conference in Montreal to which individuals and representatives of organisations in the building industry were invited to consider jointly the implications of the recommendations referred to the PQAA for action at the provincial level. At the conclusion of the conference resolutions recommending specific action in connection with a number of recommendations were presented to the general meeting.

The Ontario Association of Architects has also developed a specific programme of action to treat recommendations referred to them. This programme involves, first of all, meetings with builders to discuss basic issues of mutual concern to architect and builder. Following this, discussions with other organisations will take place to consider steps to be taken to act on particular recommendations.

To date, initial action has been carried out with regard to all recommendations contained in the residential environment report, and the RAIC is hopeful that substantial progress will be made in the next 10 to 12 months in carrying out its implementation programme.

New Secretary for LMBA. The Council of the London Master Builders Association has appointed Mr D. W. Payn, TD, FRCB, Barrister-at-Law, to be Secretary of the Association in succession to Mr R. E. Stenning.

Mr Payn joined the staff of the Association on 1 January as Secretary Designate, and will take up his duties on 1 March.

Architecture Week at Bentall's, Kingston. Following up the successful week at Guildford last summer, the Kingston upon Thames District Chapter of SESA held an exhibition of photographs, drawings and models of their work at Messrs Bentall's, 9-14 January. Sir Hugh Casson, Vice-President, who opened the exhibition, described it as very well displayed and beautifully mounted. This was a tribute to the labours of Messrs R. A. Michelmore, K. Wood, A. Blanc and J. Lomas [44]. The RIBA posters were made use of in the introductory section and there was an eye-focusing mural by Mr P. Jones. Substantial exhibitions of this kind are a useful form of advertising the profession. Members of the public have explained to them, either at the exhibition desk or in the catalogue, how they may get in touch with the architects exhibiting, or others as the case may be.

Study Tour of West Germany. A special study tour of West Germany has been arranged for British architects and town planners from 23-29 April 1961. The tour will include visits to Bonn, Bad Godesberg, Cologne, Remscheid, Düsseldorf, Essen, Sennestadt, Hanover and Berlin, and will give the opportunity of meeting leading German architects and town planners who will conduct the party. The cost of the tour is £48 with additional supplements of £4 15s. for first class rail travel and £18 for return flight. Full details of the tour are to be had on application to Mr Joe Browning, 22 Copse Avenue, West Wickham, Kent (Springpark 1617).

Study Tour of Continental Churches. A study tour is being arranged by the Department of Extra-mural Studies of the University of Birmingham to visit many of the important continental modern churches and to see some of the major examples of Carolingian, Romanesque and Gothic church building as well as a few specimens of Baroque architecture and decoration. Places to be visited include Aachen, Duren, Cologne, Düsseldorf, Mainz, Worms, Speyer, Heidelberg, Saarbrücken, Strasbourg, Colmar, Mulhouse, Basel, Belfort, Audincourt, Ronchamp, Dijon, Vézelay, Troyes, Reims, Laon and Amiens. The tour will take place from Thursday 27 April to Wednesday 10 May, and the cost will be approximately £50.

Full details and application forms may be obtained from the Department of Extra-mural Studies, The University, Edgbaston, Birmingham 15. The forms should be completed and returned with a deposit of £5: the balance will be required by 18 March. Immediate application is advisable as numbers will be limited.

Architecture of New Stockholm. An exhibition of 'Architecture of New Stockholm' is being held at The Building Centre, Store Street, London, WC1. It is open until 22 February, Monday to Friday 9.30 a.m. to 5 p.m., and Saturday 9.30 a.m. to 1 p.m.

The exhibition, which has been designed and arranged by the City Council of Stockholm, consists of drawings, photographs, models, etc. illustrating building and planning developments in Stockholm, concerning commerce, transport, recreation, education and housing.

University of London, Institute of Archaeology. Among the recent grants offered by the Gulbenkian Foundation is one of £2,000 per annum for five years (total £10,000) for the academic part of a post-graduate course combining practical and academic training for architects wishing to specialise in the care and restoration of ancient buildings.

Many appeals are launched locally or nationally for the preservation or restoration of medieval cathedrals and churches or historic and ancient monuments and other buildings of aesthetic or historic importance in Britain. But at the same time, with the modern revolution in taste and technique, the supply of architects properly equipped to advise on or to undertake the care of old buildings is rapidly declining.

For these reasons the Standing Joint Conference on the Recruitment and Training of Architects for the Care of Old Buildings has suggested the need for a special course of training. A two-year course is proposed, combining practical training (in the Ministry of Works, the LCC and the offices of private architects specialising in old buildings) and academic study in the University of London Institute of Archaeology.

The Standing Joint Conference on the Recruitment and Training of Architects for the Care of Old Buildings (on which the RIBA is represented) was formed in 1959 under the Chairmanship of the Very Reverend Seiriol J. A. Evans, Dean of Gloucester, to promote whatever measures seemed practicable to remedy the great shortage of architects with knowledge and experience of conservation work. The Gulbenkian Foundation's grant will make possible the attainment of its first major objective.

It is hoped that it may be possible to enrol the first students for the course in September 1961. Inquiries should be addressed to the Secretary, The Institute of Archaeology, Gordon Square, London, WC1.

Leverhulme Research Awards. European Scholarships, 1961. The Leverhulme Trustees offer to British-born subjects normally resident in the United Kingdom two scholarships of £600 for one year (an additional allowance may be paid to a married scholar) for advanced study in a centre of learning in any European country except Great Britain or Ireland. Candidates should be between the ages of 24 and 30 on 1 October 1961 (allowance in the upper age limit will be made for national service).

The scholarships are not intended for students of modern languages; otherwise no subject of study will be excluded but preference will be given to candidates who wish to study in the subjects normally grouped in the Arts Faculties of universities.

The closing date for receipt of application is 28 February and the scholarships will be tenable from 1 September 1961. Application must be made on form ES obtainable together with further information from the Secretary, European Scholarships, Leverhulme Research Awards, St Bridget's House, Bridewell Place, London, EC4.

Ideal Homes Competition and Exhibition in the Federation of Malaya. The Prime Minister of Malaya, Tengku Abdul Rahman opened the Ideal Homes Exhibition at the British Council Centre, Kuala Lumpur in

January. The occasion was attended by more than 200 people including cabinet ministers, diplomats and heads of Government departments.

The Ideal Homes Competition and Exhibition was sponsored by 27 leading commercial firms in the Federation of Malaya and was organised by the Federation of Malaya Society of Architects in conjunction with the *Malay Mail*. Mr A. A. Geeraerts [4], the President of the FMSA, on behalf of the Society thanked the promoters for their generosity; and the Prime Minister said that this, the first Ideal Homes Exhibition held in Malaya, deserved the highest words of praise.

The object of the competition apart from fostering interest in the design of an £18,000 Ideal Home was to raise funds for furthering architectural education in Malaya. Each of the promoters contributed a sum of £500 towards this cause which has made it possible to send one further student to the Technical College for three years' full time architectural training.

With this two-fold objective the first Ideal Homes Competition and Exhibition is expected to make a valuable contribution to architecture in the Federation. First, it will help to raise the standard of home design and to show the ordinary house purchaser what can be achieved for the sum of £18,000 excluding land and architects' fees. Secondly, it will help brilliant young Malaysians who would otherwise have no opportunity to embark on a career of architecture to receive a training up to the RIBA Intermediate standard.

The Prime Minister presented cheques for the sum of £500 to Mr Norman G. Lehey [4], Mr Kington Loo [4] and Mr Fong Ying Leong [4] who were awarded by the assessors the three equal winning designs.

Mr Norman G. Lehey is the Chairman of the Education Committee of the FMSA and a senior lecturer at the Technical College. Mr Kington Loo is the Vice-President of the FMSA and a partner with Booty, Edwards and Partners. Mr Fong Ying Leong is also a member of the FMSA.

New Institute for Community Planning in Ghana. The Bureau of Technical Assistance Operations of the United Nations and the University of British Columbia, through its Department of Community and Regional Planning, have signed an agreement for the purpose of initiating and developing a new Institute for Community Planning in Ghana. Eighteen months ago Dr H. Peter Oberlander [4] was asked to go to Ghana as a United Nations Technical Assistance Specialist and advise on ways and means of training urgently needed technical personnel in the field of Community Planning.

Upon his recommendation, the Government of Ghana and the United Nations have agreed to establish a training centre in the form of an Institute for Community Planning. This Institute, under the auspices of the Ghanaian Government and sponsored by the United Nations, will train Local Planning Assistants who will be responsible, under full professional guidance, with the carrying out of a great variety of local planning projects. The Government of Ghana has projected a comprehensive and ambitious five year development plan, and it is within this

framework that locally trained planning technicians are needed. In due course this Institute may become a regional training centre for junior planning staff from other countries in West Africa.

The University of British Columbia will supervise the Institute for an initial period of three years in the hope of developing full local responsibility for the Institute at the earliest possible moment. The University will provide the Director of the Institute and advise on a continuing basis on a great variety of academic and administrative details through Dr Oberlander who will act as consultant.

Under the terms of the Agreement, the University of British Columbia has taken on the staff Mr Alan H. Armstrong with the rank of Associate Professor in Planning. Professor Armstrong will be made available to the Institute in Ghana as its Director and serve in this capacity for an initial period of twelve months. He is a graduate of the University of Toronto and New York University and has participated in many ways in the development of community planning in Canada.

Building Industry Appeal Fund. Provision of Playroom at Notting Hill Adventure Playground. The facilities available for both coloured and white children at the new Notting Hill Adventure Playground at Telford Road were further improved when, on 28 November, Mr David Woodbine Parish, the President of the NEFTE, opened a playroom on behalf of the Building Industry Appeal Fund.

The cost of erecting the playroom was met by a grant from the Fund which, in co-operation with the National Council of Social Service, is administered by a representative Committee of the Building Industry. The Chairman is Mr Cyril Walker, CBE, MC, who for many years was the Chief Valuer and Chief Housing Officer of the London County Council.

The Adventure Playground was provided out of grants made by the National Playing Fields Association, the LCC and the Kensington Metropolitan Borough Council and many subscriptions from local firms and individuals. It is controlled by a local playground committee.

The playroom is the first completed project to be financed by the Building Industry Appeal Fund, but grants have already been promised to meet the cost of a three-bedded room at the new Toc H Mark III at Hackney and of a coffee lounge, servery and kitchen at the proposed new Youth Centre at Stevenage New Town.

The object of the Building Industry Appeal, which was launched during the winter of 1958-59 under the aegis of the National Council of Social Service, is to raise funds from the industry for use in sponsoring and supporting the erection of buildings which provide recreational and other facilities for young people. Experience to date suggests that the Fund is likely to be used mainly to supplement the work of other similar organisations. Considerable progress has been made since the Fund was inaugurated, but the Committee have decided that their efforts must be widened and intensified if the original target of £25,000 per annum is to be reached. They have, therefore, appointed Major-General G. S. Hatton, CB, DSO, OBE, as a full-time Appeals Organiser. He began work on

1 December and has been provided with accommodation and secretarial assistance by the National Council of Social Service with whose staff he will keep in close touch.

Adventure Playgrounds. A progress report on Adventure Playgrounds has been issued by the National Playing Fields Association in the form of a brochure giving details about the administration, financing and running of Adventure Playgrounds, price 1s. 6d. from the offices of the Association at 71 Eccleston Square, London, SW1.

Health Exhibition Centre. Queen Elizabeth, the Queen Mother, will open the new Health Exhibition Centre of the Royal Society of Health on Wednesday 1 March 1961.

The Exhibition Centre which has been designed to display the best current practice in all branches of public health will be the only one of its kind in the world.

It will contain sections on: clean air, communicable diseases, drainage and sewerage, food, health and welfare services, lighting, heating and ventilation, occupational health, pest control, public cleansing, radiation, sewage disposal, site planning and building construction, vital statistics and water.

stature. He was the "small dark man" liked and respected by everyone with whom he came in contact.

His many friends and associates will remember him for his integrity, kindness, his quickness in everything he did, and above all the genial and friendly manner which abounded his being.

William Herbert Swann [A]
died on 13 December 1960.

Mr C. E. H. Swann writes:

'Mr Swann was articled to Mr Watson Fothergill of Nottingham and served as an improver under Mr Basil Champneys of London, until 1901 when he entered into partnership at Nottingham with the brothers Messrs F. O. and H. C. Wright. The partnership "Swann and Wright" was concerned largely with domestic, commercial and industrial work, including the greater part of the Raleigh Cycle Works built prior to the last war. Mr Swann also designed the Westminster Bank and enlarged the Barclays Bank, both branches at Sneinton, and carried out restorations to the tower of St Helen's Church at Plungar in Leicestershire.

'During the past 30 years Mr Swann had surveyed and made lay-outs for estates developed at Bramcote and in the Basford area of Nottingham, as well as for the considerable development of West Bridgford. He leaves a son and two daughters.'

Sir Ninian Comper

The ashes of the late Sir Ninian Comper, who died on 22 December at the age of 96, are being interred in the nave of Westminster Abbey on Friday 10 February.

For Sir Ninian Comper there was no question of whether architecture was an art or a profession. His conception of his metier precluded both registration and membership of the RIBA. His son Mr J. B. S. Comper is a Fellow of the Royal Institute. Sir Ninian was a unique and highly respected figure; the last of his line. He was born in Aberdeen in 1864. After attending the Ruskin School of Art, Oxford, and the Royal College of Art, he was articled to G. F. Bodley and T. Garner.

In over 70 years of working life his output was prodigious, and although he never sought publicity, for many people of discrimination he was the doyen of ecclesiastical architects. He received his knighthood in 1950, when the Labour Government were in office. The clue to his approach to design is contained in the title of one of his books, *Of the Christian Altar and the Buildings Which Contain It*, published in 1950. He designed mostly in Gothic, but in one or two of his works, such as the Welsh National Memorial, Cardiff (1928) preferred Renaissance.

Among his works, including interiors, may be mentioned: Wimborne St Giles; St Philip, Cosham; St Mary's, Rochdale; St Mary's, Wellingborough; St Philip, Portsmouth; St Martin's Chapel, Chailey; the Royal Window, Canterbury Cathedral (1954); the east window, Holy Trinity, Coventry (1955). Works by Sir Ninian that can be seen in London include: St Cyprian's, Marylebone (1903); St Mary Magdalene, Paddington; Warrior's Chapel, Westminster Abbey (1927); The Parliamentary War Memorial, Westminster Hall (1952). His

most recent work was his High Altar and two stained glass windows in St Mark's, Regent's Park.

Notes from the Council Minutes

Meeting held on 10 January 1961

Membership. The following members were elected: as Associates 50.

Students. 38 Probationers were elected as Students.

Applications for Reinstatement. The following applications were approved: as Associates: James Cecil Lees Bodington Bailey, Raymond Banks Thorpe, Harold Roland Woodwood.

Obituary. The Secretary reported with regret the death of the following members: Pierre Avicenna d'Avoine [F], Francis Xavier Velarde, OBE [F], Reginald Palmer Baines [Retd F], Leonard Arthur Culliford, MC [Retd F], Frank Randle Carter [A], John Sinton Hogg [A], Thomas Herbert Winny [A], Granville Walter Henry George [L], Fred Scatchard [Retd L], Cyril Slater [Retd L].

By resolution of the Council the sympathy and condolences of the Royal Institute have been conveyed to their relatives.

Membership Lists

ELECTION : 10 JANUARY 1961

The following candidates for membership were elected on 10 January 1961.

AS ASSOCIATES (50)

Allison: Julian Philip, Dipl.Arch.(Northern Polytechnic), Brentwood.
Baden-Powell: (Mrs) Charlotte Elizabeth, AADip.
Baker: Ronald Thomas, Dipl.Arch.(Northern Polytechnic), Harlow.
Barnett: Winston, Dip.Arch.(Dunelm), Newcastle upon Tyne.
Bellis: John Keith, Dip.Arch.(Manchester), Wrexham.
Belton: Lawrence Michael.
Burrows: John Robert, Dipl.Arch.(Northern Polytechnic).
Calhoun: Michael John Boucicault De Suffield, DAE(Edin.), Edinburgh.
Chandler: John, Dipl.Arch.(Northern Polytechnic).
Chartres: Thomas George, B.Arch.(L'pool).
Chua: Charles Kim Kuye, B.Arch.(Melbourne), Dip.Arch.(Melbourne), Malacca, Malaya.
Clark: Alan Earney, Dipl.Arch.(Northern Polytechnic), Bromley.
Cooper: Brian Maurice, Dipl.Arch.(Northern Polytechnic).
Cowin: William Henry, Dipl.Arch.(Northern Polytechnic), Meopham.
Crapnell: Robert Henry, Dipl.Arch.(Northern Polytechnic).
Cunningham: Allen, B.Arch.(L'pool), Cambridge.
Drewitt: Christopher Frederick, AADip.
Fossati: Dietrich August Walther Georg, B.Arch.(CT).
Hamer-Harries: Richard Martin, Llandegfan.
Hawes: Francis Lawrence, Dipl.Arch.(Northern Polytechnic), Maidenhead.
Howes: Ernest William, Dipl.Arch.(Northern Polytechnic).
Kenton: Morris, Naramata, British Columbia, Canada.
Khaw: Poh Kooi, Dipl.Arch.(Northern Polytechnic).

Obituaries

John Forbes Clark, DFC, Dipl.Arch. (L'pool) [A]
died 11 September 1960.

Mr T. Elwell [A] writes:

'The untimely and tragic death of John Forbes Clark came as a great shock to the many who knew him and enjoyed his friendship.'

'Whilst competing in the Prescott Motor Car Hill Climb on a sunny Sunday afternoon, with many of his friends watching, he collided with a barrier and from the injuries sustained, died four hours later in Cheltenham Hospital.'

'John Forbes Clark received his architectural training at Liverpool University where he remained until he joined the Royal Air Force in 1940. He served in 404, 143, 119 and 206 Squadrons R.A.F., and as Flight-Lieut. Navigator and Bombing leader was awarded the DFC for his part in sinking a "U" boat, thus wrecking his plane on the "run in". As a result he had a badly injured back, and with his comrades, was adrift for four days in an open dinghy in the Arctic Circle.'

'After the war, he returned to Liverpool and qualified in 1946. Subsequently, in 1948 he became a partner in his father's firm (Scott and Clark), together with the late T. M. Galbraith.'

'On the death of his father in 1953 and T. M. Galbraith in 1956, he became sole proprietor of the firm. His works were many and varied, ranging from licensed premises, shops, offices, factories, municipal and domestic housing, etc.'

'His interests included photography, music and art, and in 1954 he succeeded to his father's seat on the Board of Directors of Tipton Building Society. His main hobbies, however, were motor-cars and motor-car racing.'

'John Forbes Clark was a man of outstanding character. His energy and kind heart were inversely proportioned to his

Kirby: Ronald Hubert, B.Arch.(CT), Lusaka, N. Rhodesia.
Lambinon: Albert, B.Arch.(Natal).
Love: Eric Bernard, Dipl.Arch.(Northern Polytechnic).
McGoran: William, B.Arch.(NUI Dublin), Philadelphia, Pennsylvania, USA.
Mackenzie: Roderick, Dip.Arch.(Dunelm), Morpeth.
McLaren: Brian Ross, B.Arch.(Natal), Bulawayo, S. Rhodesia.
Manning: Richard Arthur, Dip.Arch.(Birm.), Montreal, P.Q., Canada.
May: John Bruce.
Medhurst: Duncan Howard.
Needham: Stuart Roger, Dip.Arch.(Sheffield), Sheffield.
Padovan: Richard Giuseppe Howard, A ADipl., Cobham.
Ponting: Stuart, Dipl.Arch.(Northern Polytechnic), Bushey Heath.
Shaffrey: Patrick J., B.Arch.(NUI Dublin), Dublin.
Shah: Syed Alam, Karachi, Pakistan.
Sherlock: Derek Alfred, B.Arch.(CT), Lusaka, N. Rhodesia.
Smart: Colin Percival, A ADipl.
Southard: Anthony John.
Sniff: Alfred George Tekenate, BA(Arch. (Sheffield), Enugu, Nigeria.
Starkin: Ivan, Dipl.Arch.(Northern Polytechnic).
Undrill: Michael Anthony, Dipl.Arch.(Northern Polytechnic), Cambridge.
Ward: John Richard Owen, Dipl.Arch.(Northern Polytechnic).
Warnesuriya: Lewishennedige Gaminitissa Fernando Guna, B.Arch.(Melbourne), Panadura, Ceylon.
Williams: John, A ADipl.
Williams: William Samuel Andrew, Dipl.Arch. (Northern Polytechnic).
Wong: Kok Yan, B.Arch.(Melbourne), Singapore.
Wright: (Miss) Heather Emson, Dipl.Arch. (Northern Polytechnic), Hertford.
Young: Derek George, Dipl.Arch.(Northern Polytechnic), St Neots.

ELECTION: 14 MARCH 1961

An election of candidates for membership will take place on 14 March 1961. The names and addresses of the candidates found by the Council to be eligible and qualified in accordance with the Charter and Bye-laws, with the names of their proposers, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, RIBA, not later than Friday 17 February 1961.

The names following the applicant's address are those of his proposers.

AS ASSOCIATES (71)

Ainsworth: William Robert, B.Arch.(Dunelm), 1 Grosvenor Villas, Jesmond, Newcastle upon Tyne. Prof. J. H. Napper, Bruce Allsopp, H. Wharfe.

Albon-Crouch: Clifford Eric, 9 Delvin Road, Westbury-on-Trym, Bristol, T. H. B. Burrough, E. L. G. Ross, W. H. Watkins.

Allsopp: Robert Nicholas, Dip.Arch.(Leics.), 44 Somerville Road, Leicester. Robert Howrie, J. H. Lloyd, Owen S. Penn Smith.

Armstrong: Patrick Stewart, Dip.Arch.(Birm.), 'One' Regina Drive, Walsall, Staffordshire. A. G. Sheppard Fidler, Robert G. Madeley, A. Douglas Jones.

Avery: Graham Richard, Dip.Arch.(RWA), Seaways, 1A High Street, Budleigh Salterton, Devon. T. H. B. Burrough, F. L. Hannam, Sidney Kave.

Ball: Thomas Malcolm, A ADipl., 'Fern Lodge', Dodworth Road, Barnsley, Yorks. Arthur Korn, M. Pattrick, Anthony Cox.

Beer: Michael John, Dip.Arch.(Dunelm), 12 Cauldwell Close, Whitley Bay, Northumberland. Prof. J. H. Napper, H. Wharfe, Bruce Allsopp.

Bennett: Colin, Dipl.Arch.(Leeds), 96 Sevington Road, Henden, NW4. F. Chippindale, Kenneth Turner, Hubert Bennett.

Blaikie: Richard Mercer, D(A(Dundee), 37 Spencer Place, Kirkcaldy, Fife. Chessor L. Matthew, A. F. S. Wright, W. S. Gauldie.

Boyd: Hugh Dick Falconer, A ADipl., 68 Abergare Gardens, NW6. Philip Powell, Hidalgo Moya, G. A. Jellicoe.

Brookhouse: Ralph James, Dip.Arch.(Leics.), 46a Glebe Road, Barnes, SW13. J. E. K. Harrison, Robert J. Howrie, S. Penn Smith.

Brooks: Norman William Tudor, Dip.Arch. (Southend), 4 Downham Road, Canvey Island, Essex. J. M. Scott, W. A. Eden, Hubert Bennett.

Buist: James Alexander, D(A(Edin.), 25 Grange Loan, Edinburgh. John S. Craig, Esme Gordon, W. G. Dey.
Burn: John Urquhart Burton, 142 Foxley Lane, Purley, Surrey. Leonard G. Pargiter, John S. Walkden, J. S. Foster.
Carby Hall: (Mrs) Heather Gillian, Dipl. Arch.(Leeds), 25 Westfield Oval, Yeading, Leeds, Yorks. F. Chippindale, W. H. King, Noel Pyman.
Cartwright: Thomas James Nelson, MA (Cantab.), Dip.Arch.(Notm), 4 and 5 Clarence Street, Nottingham. T. N. Cartwright, J. Gordon Woolatt, J. M. Dudding.

Copland: John Alexander, D(A(Edin.), Castlebank, Glencarle Road, Dumfries. Alan Reiach, J. Roy McKee, W. E. Hollins.

Coupland: Grant James, c/o Bank of New Zealand, 54 Regent Street, WI. Prof. A. C. Light and The President and Hon. Secretary of the NZIA under Bye-law 3(a).

Cowasjee: Noshirwan, Dip.Arch.(The Polytechnic), 6 Sandown House, Heathfield Terrace, Chiswick, W4. Eugene E. Rosenberg, John S. Walkden, F. R. S. Yorke.

Crockford: Billie Henry, Dipl.Arch.(Northern Polytechnic), Woodland House, Woodland Road, New Southgate, N11. Bryan Westwood, Norman Westbrook, C. G. Bath.

Cummock: John Blair, D(A(Glas.), 99 Millbrae Road, Glasgow, S2. Prof. F. Fielden, Albert D. Cordiner, Prof. William J. Smith.

Curry: William James, Dip.Arch.(Sheffield), 40 Loopland Crescent, Belfast 6. Prof. John Needham, A. G. Goligher, H. B. Leighton.

Dale: John Russell, Dip.Arch.(Birm.), 49 Ball Hall Hayes Green, Leek. Staffs. Richard G. Cox, J. F. R. Gooding, F. W. B. Charles.

Deaney: Henry Cooke, Dip.Arch.(Sheffield), 18 Highpark Crescent, Belfast 13, N. Ireland. Prof. John Needham and applying for nomination by the Council under Bye-law 3(d).

Dockray: Brian, 14 Riversdale Drive, Upper Poppleton, York. F. Chippindale, Eric Brown, Charles R. Thorn.

Ferguson: Malcolm, Dip.Arch.(The Polytechnic), 140 Westbourne Terrace, W2. M. de Metz, H. Norman Haines, John S. Walkden.

Fox: Christopher Carr, Dip.Arch.(Notm), 43 Farm Road, Chilwell, Notts. Norman Summers, Colin Gray, Peter Bartlett.

Gale: Donald Alastair, Dipl.Arch.(Leeds), 6 Fairview Way, Edgware, Middlesex. F. Chippindale, Anthony M. Chitty, K. Turner.

Garside: John Kirkland, Dip.Arch.(Birm.), 364 Allesley Old Road, Coventry. Donald E. Gibson, F. W. B. Charles, W. Stanley Hattrell.

Gordon: Adam Lindsay, BA(Dipl. Arch. (Cantab.), The Red House, Kelvedon, Essex. Prof. Sir Leslie Martin, W. Parker Dyson, David Roberts.

Greenway: John Richard, Dip.Arch.(Birm.), 55 Howley Grange Road, Quinton, Birmingham 32. A. Douglas Jones, F. W. B. Charles, A. G. Sheppard Fidler.

Gregson: Anthony Ian, Dipl.Arch.(UCL), Valley House East, Glassmill Lane, Bromley, Kent. R. C. White-Cooper, H. F. Hoar, Sydney Gregson.

Gresson: (Mrs) Jennifer Madeleine, Dipl. Arch.(UCL), Valley House East, Glassmill Lane, Bromley, Kent. R. C. White-Cooper, H. F. Hoar, Sydney Gregson.

Hampden: Christopher John, Dipl.Arch. (Kingston). 1 Highcroft, Milford, Surrey. W. Crabtree and applying for nomination by the Council under Bye-law 3(d).

Hannon: Michael Edward, Dip.Arch.(Birm.), 5 Violet Street, Belfast, N. Ireland. A. Douglas Jones, F. W. B. Charles, Richard G. Cox.

Hatton: Roderick Edward Norman, Dip. Arch.(Leics.), 5 Marlborough Road, Richmond, Surrey. Robert Howrie, F. G. West, Colin Anderson Lucas.

Hodgson: Jeremy David Wallworth, Caravan Site, Forfar Road Filling Station, Tealing, by Dundee, Angus. Frank Rison, Chessor Matthew, T. H. Thoms.

Howard: Michael Warwick, Dip.Arch. (Leics.), 117 North Road, Bourne, Lincolnshire. R. Gray Bell, D. E. E. Gibson, L. Robert Bradshaw.

Hurn: Gordon Charles, Dip.Arch.(Leics.), 112 Trafford Road, Norwich, Norfolk. Robert Howrie, C. J. Tomkins, E. R. Crane.

Jay: Gerard Anthony Carew, Dipl.Arch. (Oxford), 6 Glazebury Road, W14. Reginald Cave, F. T. Pritchard, S. R. Edwards.

Jinadu: Gabisiyu Bolaji, Dip.Arch.(Birm.), 129 Gillott Road, Edgbaston, Birmingham 16. A. Douglas Jones, A. G. Sheppard Fidler, F. W. B. Charles.

Jones: Trevor Lewis, 'Gateways', 4 Willows

Avenue, Morden, Surrey. John S. Walkden, Arthur J. Norcliffe, J. S. Foster.

Kirby: Douglas Conyers, Dipl.Arch.(Oxford), 5 Cedar Gardens, Bevois Town, Southampton. Reginald Cave, F. T. Pritchard, J. B. Brandt.

Kirk: Robin Mansfield, Dip.Arch.(Auck.), 14 Charles II Street, SW1. M. K. Draffin and The President and Hon. Secretary of the NZIA under Bye-law 3(a).

Lansley: Clifford Gordon, Dip.Arch.(The Polytechnic), 'Courtview', Frithwood Avenue, Woodhouse, Middlesex. John S. Walkden, Oliver Law, Gordon Gillman.

Lumley: Colin Arthur, Dip.Arch.(The Polytechnic), 185 Spring Grove Road, Isleworth, Middlesex. Hidalgo Moya, Philip Powell, J. S. Foster.

Makower: Peter, MA(Cantab.), 16 Rugby Mansions, Bishop King's Road, W14. J. S. Foster, Frederick Gibberd, R. J. Double.

Moore: Edward Alan, Dipl.Arch.(Leeds), 'The Chestnuts', Helpmorth, York. F. Chippindale, Kenneth Ward, C. W. C. Needham.

Paterson: Robert Wallace, Dip.Arch.(The Polytechnic), 185 Spring Grove Road, Isleworth, Middlesex. Hidalgo Moya, Philip Powell, J. S. Foster.

Pite: William Bidlake Winton, Dip.Arch. (The Polytechnic), Marley Conse, Marley Common, near Haslemere, Surrey. Richard F. M. Mellor, Robert W. Pite, John S. Walkden.

Ritchie: Gordon Stewart, D(A(Dundee), 61 Stoney Road, Coventry. Chessor Matthew, W. S. Gauldie, A. F. S. Wright.

Roberts: Charles Brian, Dip.Arch.(Sheffield), 13 Ranford Road, Burnage, Manchester 19. Prof. John Needham, P. Garland Fairhurst, Prof. Stephen Welsh.

Rohson: (Miss) Pamela Forster, The Home

stead, 136 Gledhow Wood Road, Leeds 8. Yorks. F. Chippindale, Noel Pyman, G. Davy.

Rushton: Terence, Dip.Arch.(Leics.), c/o 93 Marsden Lane, Leicester. Robert Howrie, S. Penn Smith, J. H. Lloyd Owen.

Scott-Mitchell: Alastair Harold Pickering, Dipl.Arch.(UCL), 44a Primrose Hill Road, NW3. Prof. H. O. Corfato, Philip Powell, Hidalgo Moya.

Sharma: Madan Mohan, Regent House Hotel, 36 Bernard Street, Russell Square, WC1. Applying for nomination by the Council under Bye-law 3(d).

Shorrocks: Clifford Gordon, Dip.Arch.(Sheffield), 15 Stanley Gardens, Kensington Park Road, W11. Prof. John Needham, Philip G. Freeman, Denis Poulton.

Slaski: Zbigniew Piotr, 7 Cromwell Road, SW7. C. Elsom, M. P. Floyd, W. G. Challen.

Smith: Ian, D(A(Edin.), Sapelle, Nunholt Road, Dumfries. Alan Reiach, J. Roy McKee, W. E. Hollins.

Smith: John Victor, 12 Parklands, Bramhope, near Leeds. F. Chippindale, Kenneth Turner, John Hardwick.

Smith: Newman, Dip.Arch.(Dunelm.), 2 The Elms West, Sunderland, Co. Durham. Prof. J. H. Napper, Bruce Allsopp, H. Wharfe.

Staples: Anthony Aidan Charles, Dip.Arch. (RWA), 43 Bellinton Road, Knowle, Bristol 4. R. Towning Hill, John Collins, T. H. B. Burrough.

Stone: Charles Eric, Dip.Arch.(Sheffield), 126 Westwick Crescent, Sheffield 8. Prof. Stephen Welsh. Prof. John Needham, H. B. Leighton.

Talbot: Michael James, 1 Saint Lawrence Avenue, Norwich, Norfolk. Frank Rison, N. Seton Morris, Allan Johnson.

Taylor: Stuart, Dip.Arch.(Birm.), 23 Wilton Crescent, SW1. Sir Hugh Casson, Neville Conder and applying for nomination by the Council under Bye-law 3(d).

Thexton: John Whittam, Dip.Arch.(Dunelm.), 78 Greenfield Road, Brunton Park, Gosforth, Newcastle upon Tyne 3. Prof. J. H. Napper, H. Wharfe, Bruce Allsopp.

Walker: Peter John, Dip.Arch.(Birm.), 2a Westmead Road, Sutton, Surrey. A. Douglas Jones, H. H. Powell, A. G. Sheppard Fidler.

Walmsley: John Leslie, Dipl.Arch.(Leeds), 27 Cumberland Road, Lidget Green, Bradford 7, Yorks. E. D. Jordan, F. Chippindale, K. Turner.

Waterhouse: John Michael, Dipl.Arch. (Leeds), 24 Roxholme Place, Leeds 7. J. L. Crowther, F. L. Charlton, F. Chippindale.

Wood: Ramon Keith, 74 Wheeles Road, Edgbaston, Birmingham 15. A. C. Townsend, F. R. Steele and applying for nomination by the Council under Bye-law 3(d).

Young: David, Dip.Arch.(The Polytechnic), 18 Dorville Road, Lee, SE12. Edward D. Mills, John S. Walkden, J. S. Foster.

ELECTION : 9 MAY 1961

An election of candidates for membership will take place on 9 May 1961. The names and addresses of the overseas candidates found by the Council to be eligible and qualified in accordance with the Charter and Bye-laws, with the names of their proposers, are herewith published for the information of members. Notice of any objection or any other communication respecting them must be sent to the Secretary, RIBA, not later than Tuesday 2 May 1961.

The names following the applicant's address are those of his proposers.

AS FELLOW (1)

The following Licentiate has passed the qualifying examination:

Cheale: Cyril James, Regional Architect, PWD, PO Box 136, Accra, Ghana: 40 Seventh Avenue, Accra. Applying for nomination by the Council under Bye-law 3(d).

AS ASSOCIATES (27)

Agyeman: Osei Tutu, c/o Ghana National Construction Co. Ltd, PO Box 2582, Accra, Ghana. J. M. Scott and applying for nomination by the Council under Bye-law 3(d).

Ahmad: Zahani Bin, Dipl.Arch.(Oxford), Architectural Branch, PWD HQ, Government Offices, Petaling Jaya, Malaya. Applying for nomination by the Council under Bye-law 3(d).

Arnott: Peter James, 26 Claremont Court, 9 Claremont Street, Johannesburg, South Africa. Applying for nomination by the Council under Bye-law 3(d).

Barnes: Roy Frederick Morton, Messrs Covell, Matthews and Partners, c/o Messrs Macdonald, Layton and Co. Ltd, West Wharf, Karachi, West Pakistan. C. G. Bath, Ralph G. Covell, E. W. Palmer.

Clinton: Michael Napier, B.Arch.(CT), 6 Earls Road, Alexandra Park, Salisburi, S. Rhodesia. W. F. Hendry, J. M. Van Heerden, C. Ross MacKenzie.

Cooper: Rodney Edward, B.Arch.(Natal), 43 Treger House, PO Box 1443, Bulawayo, S. Rhodesia. Applying for nomination by the Council under Bye-law 3(d).

Cowen: John Philip, B.Arch.(Rand), c/o Messrs J. C. Cook and Cowen, 602 Gloucester House, Cor. Rissik and Jeppe Street, Johannesburg, South Africa. Applying for nomination by the Council under Bye-law 3(d).

Dadachanji: Viral Pirojsha, 37B, Gool Mahal, Sleater Road, Bombay 7, India. Prof. S. S. Reuben, H. N. Dallas, G. B. Mhatre.

Doctor: Jimmy Framroze, B.I.D.(Manitoba), Balal Estate T-3, Lamington Road, Bombay 8, India. B. E. Doctor, G. B. Mhatre, A. S. Patil.

Dongre: Umakan Waman, B.Sc.(Bombay), Manikjot, Jangli Maharaj Road, Poona 4,

India. S. H. Parekar, G. B. Mhatre, H. N. Dallas.

Fourie: Stanley, B.Arch.(Rand), SABC, PO Box 8606, Johannesburg, South Africa. Applying for nomination by the Council under Bye-law 3(d).

Ganesen: Karthigasoe, 14 Balapukuna Road, Colombo 6, Ceylon. J. C. Nilgiria, Herbert E. Gonsal, N. Wynne-Jones.

Gilmore: David Lawrence Crofton, Dip. Arch.(Birm.), College of Architecture, Cornell University, Ithaca, New York, USA. A. Douglas Jones, F. W. B. Charles, J. F. R. Gooding.

Goh: Hock Guan, B.Arch.(Melbourne), 42 Morrah Street, Parkville, N2, Melbourne, Australia. Prof. Brian B. Lewis, Mrs Hilary Lewis, R. G. Parker.

Jofriet: (Mrs) Marlene J., 311 Lonsdale Road, Toronto 7, Ontario, Canada. Sir Thomas Bennett, P. H. P. Bennett, Morris Winslade.

Jones: Gordon Alfred, PO Box 3818, Beirut, Lebanon. Frankland Dark, Thomas A. Eaton, Philip Powell.

Kapadia: Kersi, Queens Chambers, Queens Road, Bombay 1, India. B. E. Doctor, H. N. Dallas, S. J. Narwekar.

Kilberger: Harry, Dip.Arch.(Hobart, Tasmania), 169 Invermay Road, Launceston, Tasmania, Australia. George Underwood, S. W. T. Blythe, Arthur W. J. Voss.

Kwong: Pak Chu, 101-2, Victory House, 5 Wyndham Street, Hong Kong. W. W. C. Swan, Eric Cumine, J. M. Fraser.

Lim: David Joo Khoon, AADipl., c/o Messrs Swan and Maclarens, PO Box 192, Kuching, Sarawak. W. Irving Watson, F. M. Howie, J. Kirkwood.

Malkan: Jayantkumar Chaturbhuj, Ramodia Mansion No. 2, Flat No. 5, 2nd Floor, 260 Dr Annie Besant Road, Worli, Bombay 18, India. Prof. S. S. Reuben, S. H. Parekar, H. N. Dallas.

Mhatre: Vidyadhar Gajanan, 335 Cadell Road, Dadar, Bombay 28, India. S. H. Parekar, S. J. Narwekar, R. S. Reuben.

Pradhan: Rameschandra Mahadeo, Architect, Central PWD, Room No. 20, L2 Block, Secretariat, New Delhi 2, India. J. P. J. Bilmoria, S. K. Joglekar, J. R. Talpade.

Price-Hughes: Glynn, B.Arch.(Pretoria), c/o Messrs Corrigan, Everest and Innes, 414 Permanent Buildings, Paul Kruger Street, Pretoria, South Africa. Prof. A. L. Meiring and applying for nomination by the Council under Bye-law 3(d).

Tan: Beng Kiat, B.Arch.(Melbourne), 4 Jalan Ishak, Singapore 14. Prof. Brian B. Lewis, R. G. Parker, Mrs Hilary Lewis.

Thomas: Victor Clifford, B.Arch.(CT), Lombard House, 48 Gordon Avenue, Salisbury, Southern Rhodesia. C. A. Knight, Lionel F. R. Coote, C. E. Robson.

Toh: Kheng Hoon, B.Arch.(L'pool), 39 Thorpe Road, Penang, Malaya. Prof. R. Gardner-Medwin, R. R. Young, F. X. Velarde.

of Companies, and moved into offices at 2 The Market Place, Kingston upon Thames, Surrey.

Mr William H. Sutton [4], Chief Architect in the City Engineer's Department at Salford, has been appointed Chief Architect to Blackburn Corporation in succession to Mr E. C. R. Page [4].

Mr J. D. Tetlow, B.Arch., MTP [F] has been appointed Consulting Architect and Planning Adviser to the Tamworth Borough Council on central area redevelopment.

PRACTICES AND PARTNERSHIPS

Mr John Bicknell, AADIP [4], is now practising under the style of Bicknell and Hamilton at 25 Bedford Row, London, WC1 (Chancery 1342).

Messrs Booty Edwards and Partners [4] of Kuala Lumpur, Singapore and Brunei have now opened an office at 24 Portland Place, London, W1, where they will be pleased to receive notices, trade literature, etc.

Messrs Boswell, Mitchell and Johnston (Mr Ninian Johnston, ARSA, AMTPI [F] and

Mr Frank Campbell, DA [4],) of 256 West George Street, Glasgow, C2, announce that as from 16 January 1961, they have taken into partnership Mr Eric Hargreaves, DA [4] and Mr Robert Scott Noble, DA, AMTPI [4]. The name of the firm is unaltered.

John Breakwell and William Davies. The share of the partnership held by the late Mr John Breakwell has been purchased by Mr William Davies [4]. The firm will continue to practise under the name of Breakwell and Davies at 10 Hill Street, St Helier, Jersey, C1 (Central 32844).

Mr W. J. Bruxby [4], practising as Bruxby and Evans, has taken into partnership Mr Ian C. Thornton [4]. The practice will continue under the same style at 41-2 Bluecoat Chambers, School Lane, Liverpool 1 (Royal 2737 and 4123) with a branch at The Rectory Office, New Market Street, Wigan (Wigan 3791).

The practice of **Harold E. Davies** and Son of 9 Chapel Walks, South Castle Street, Liverpool 1, of which the late Mr Harold Hinchcliffe Davies [4] was principal, has been incorporated into the practice of **Herbert J. Rowse and Harker** [F], Martins Bank Building, Water Street, Liverpool 2, to which address all correspondence connected with Harold E. Davies and Son should be forwarded.

Messrs F. M. Dewing [4] and **J. M. Herriott** [4] have dissolved partnership. The practice will be carried on at 4 Princes Street, Norwich, NOR 123, under the name of **Frank M. Dewing** as originally.

Mr Patrick B. Garnett [4] and **Mr J. Anthony Cloughley** [4] have formed a partnership under the title of **Garnett and Cloughley** at 10 Kimmel Street, Rhyl, Flintshire (Rhyl 2367).

The partnership of **Messrs Godwin, Clist and Greenway** at Bank Buildings, Kidderminster, Worcs, has been dissolved by mutual agreement as from 22 September 1960. All the partners will continue to practise at Bank Buildings: Mr Godwin and Mr Greenway as **Godwin and Greenway, FRICS** [F], and Mr Clist as **Hubert Clist** [F].

Mrs A. L. Gunzburg [4] has relinquished her appointment as Senior Assistant Architect with the Birmingham Regional Hospital Board and has started in practice on her own account at 'Vogelweide', Poolhead Lane, Wood End, Tanworth-in-Arden, Warwickshire (Tanworth-in-Arden 412), where she will be glad to receive trade catalogues, samples, etc.

Miss Christian Hamp, AADIP [4] and **John Boissevain**, AADIP [4] have formed a joint partnership to be known as **Hamp and Boissevain** and their office address is 37 Newton Road, Bayswater, London, W2.

Mr F. R. S. Higgison [4] has entered into partnership with **Mr Andrew B. Brown**, Dip. Arch. (UCL) [4] and will continue to practise from 48 High Street, Burnham-on-Sea, Somerset (Burnham-on-Sea 3056), under the style of **Higgison and Brown**.

The partnership between **Mr G. Forsyth Lawson** [L] and **Mr C. J. Cunningham** [4] has been dissolved by mutual consent. Mr Lawson will continue to practise from 30 Horse Fair, Banbury, Oxon. Mr Cunningham will practise from 18 Marlborough Road, Banbury (Banbury 3423-4) where he will be pleased to receive trade catalogues.

Mr William C. McVeigh [4] has commenced practice at 89 Malone Avenue, Belfast (Belfast 66240), where he will be pleased to receive trade catalogues.

Mr James Hewitt Mitchell [4] and **Mr Robin Edmund Moors** [4] announce that from 31 December 1960, the partnership between them under the style of Hewitt Mitchell and Partners has been dissolved by mutual agreement, and that as from 1 January 1961 this practice will continue to be carried on by **Mr J. Hewitt Mitchell** at 140 Streatham Hill, London, SW2. **Mr R. E. Moors** will commence practice on his own account under the style of **Robin Moors** at Halifax Chambers, 66-68 Eden Street, Kingston upon Thames, Surrey.

Mr Alan E. Moody [4] has commenced private practice at 3 Dalkeith Grove, Stanmore,

Members' Column

This column is reserved for notices of changes of address, partnerships vacant or wanted, practices for sale or wanted, office accommodation, and personal notices other than of posts wanted as salaried assistants for which the Institute's Employment Register is maintained.

APPOINTMENTS

Mr M. Walter P. de Silva [4] has taken up the appointment of Provincial Planning Officer, Prince Edward Island, Canada. His address is PO Box 2000, Charlottetown, PEI, Canada, where he will be pleased to receive trade literature.

Mr Bruce Martin [4] has moved from the British Standards Institution upon the completion of Modular Co-ordination Studies, and has joined the staff of the University of Cambridge School of Architecture (Cambridge 54265). He is in private practice at The Old Cottage, Bury Green, Little Hadham, Herts. (Bishop's Stortford 1399), and is acting as a consultant on standardisation.

Mr J. Spedan Stedman [4] has recently been appointed Group Architect to the Hide Group

Middlesex (Stonegate 9881), where he will be pleased to receive trade literature, etc.

Mr Kenneth Nealon, FRICS [F] and **Mr Ivor J. Tanner, DFC [A]** have pleasure in announcing that as from 1 January 1961 they have taken into partnership **Mr J. W. W. Leask, AADPL [A]** and **Mr C. Marsden-Smedley, BA(Arch.) [A]**, who have been associated with the firm for the past two years. The partnership will be known as **Kenneth Nealon, Tanner and Partners** at 28 Orchard Street, Bristol 1 (Bristol 21194-6). **Mr W. F. Cashmore [A]** and **Mr W. D. Weir, ARICS [A]** continue their connection with the firm as associates.

Mr Walter G. Palmer, DFC [A] has commenced practice on his own account and has taken into his practice **Mr J. F. Goult [A]**, **Mr J. B. Holt [A]** and **Mr P. Kirby [A]**. His practice will be known under the style of **Walter G. Palmer and Associates** of 1 Spring Crescent, Portswood, Southampton (Southampton 56208), where he will be pleased to receive trade literature, catalogues and samples.

Mr Malcolm H. Peck [A] and **Mr Stanley L. Roberts [A]**, practising as **Malcolm Peck, Roberts and Associates** at 15 Friary Street, Guildford, have pleasure in announcing that, with effect from 1 July 1960, **Mr Kenneth M. Smith [A]** and **Mr Vernon J. Thurgood [A]** have been taken into associate partnership. The name of the firm is unchanged. In addition, an office has been opened at 47 Goldsworth Road, Woking, where Mr Thurgood will be pleased to receive trade catalogues.

Mr John F. Phillips, Dip.Arch.(Birm.) [A] has moved his head office to 36 New Street, West Bromwich, Staffs. (West Bromwich 2315-6), and has taken **Mr Derek Cutler [A]** into associate partnership. The style of the firm will now be **John F. Phillips and Associates**. The Walsall office will remain as before at 324A Birmingham Road, Walsall (Walsall 28329).

The practice of **Purcell and Johnson** will be carried on under the same style and title by **Mr Donovan Purcell, TD, MA [F]**, with **Mr Arthur Towson, DSC [A]** and **Mr C. J. Tomkins [F]** as associates, following the death of **Mr Frederick Johnson [F]**. The office at Mustow House, Bury St Edmunds, has been closed, and all communications should be sent to 64 Bethel Street, Norwich, NOR 57E.

Mr Roger Radford [A] has been elected an associate partner in the firm of **Skidmore, Owings and Merrill** of 425 Park Avenue, New York 22, New York.

Mr Frank Shaw [A] has resigned his position as an associate of **Sir Hugh Casson, Neville Conder and Partners**, and will be in practice at Brandon House, Nassau Street, London, W1 (Langham 1778).

Mr Peter B. Smith [A] has commenced in private practice and has opened an office at 3 All Saints Court, Bristol 1 (Bristol 23400), where he will be pleased to receive trade literature, samples, etc.

Messrs Sparrow and Clater [F/A] have opened an office at 5 Museum Street, Ipswich, Suffolk, and will be pleased to receive trade catalogues.

Mr R. Stanley [A] has been appointed a partner in the firm of **Ruddle and Wilkinson [F/A/L]** and is in charge of their branch at 32 Hall Place, Spalding, Lincs.

Mr John F. Whitfield, DA(Edin.) [A], is now practising from 39 Eden Road, Bramley, Johannesburg, South Africa, where he will be pleased to receive technical literature, etc.

Mr Arthur W. Willis [L] has taken **Mr J. Frank Johnson [A]** into partnership as from 1 January 1961. The practice will continue at Dingley Place, City Road, London, EC1, and at 16 Castle Hill Avenue, Berkhamsted, Herts., under the style of **Willis and Johnson**, incorporating Val Myer, Hart and Willis.

Messrs J. M. Wilson, H. C. Mason and Partners [F/A/L] have taken into partnership **Mr M. E. Askwith [A]** and **Mr W. P. Smail [A]**. The practice will continue at 3 Chandos Street, Cavendish Square, London, W1, under the present style.

Messrs Wilson and Wilson (Miss D. E. M. Wilson [A]) have taken into partnership **Mr H. H. Atkinson [A]**. The practice will continue under the same style at the new address, 23 Leazes Park Road, Newcastle upon Tyne 1, to which it has moved from St Andrew's Buildings, Gallowgate, Newcastle upon Tyne 1.

CHANGES OF ADDRESSES

Mr N. P. Allen, AMTPI [A] has changed his address to 27 Fieldend, Waldegrave Park, Twickenham, Middlesex.

Messrs Barber, Bundy and Greenfield [F/A] have transferred their Guildford office to 19 Quarry Street (Guildford 62572). **Mr K. Douglas Bundy** will continue in charge.

Mr P. J. H. Barratt [A] is studying City Planning at Harvard University, and his address is now 21 Conant Hall, Harvard University, Cambridge, Mass., USA. It is regretted that **Mr Barratt's name** was included, in error, in the Obituary List which was printed in the November JOURNAL. The entry should have read 'Peter James Barrett [Student]'.

Mr John Leighton Belle, AADPL [A] has changed his address to 18 East 62 Street, New York 21, NY, USA.

Mr C. F. H. Cawsey [A] has changed his business address to Architects Branch, Education Board, Wanganui, New Zealand. His home address is still 205 Koromiko Road, Wanganui, where he would be pleased to receive trade literature etc.

Messrs Hodgson, Lunn and Co. (Mr F. J. Hodgson [L] and Mr J. W. Hodgson [A]) have moved their offices to 7 Lea Pale Road, Guildford, Surrey (Guildford 61276) from 170 High Street, Guildford.

Mr John H. Innerdale [A] has changed his address to 44 Blackwater Road, Eastbourne, Sussex (Eastbourne 5754).

The present address of **Mr S. G. Kamath [A]** is Assistant Town Planner and Architect, 10 New Hardinge Road, Patna, Bihar, India.

Mr Laurence Kennard [F] has changed his address to 6 Devonshire Road, Forest Hill, London, SE23 (Forest Hill 7476), and the office at 19-20 Railway Approach, London Bridge, London, SE1, has been closed.

Mr E. S. King [A] has changed his address to 128 Boulevard Duhamel, Pincourt, Ile Perrot, PQ, Canada.

Miss Gertrude W. M. Leverkus [F] has changed her address to 18 Kingsbury Street, Brighton 1, Sussex.

Mr J. A. Maudsley [A] has changed his address to 7 Margate Road, St Annes-on-Sea, Lancs.

Mr Peter Milne [A] has changed his address to Old Kennel Cottage, Lingfield Road, Felcourt, near East Grinstead, Sussex (Dormans Park 446).

Mr G. Dennis Pillinger [A] has changed his address to 'Skomer', Heathfield Road, Chandler's Ford, Hampshire.

Mr B. Prince [A] has changed his address to c/o Cumbernauld Development Corporation, Cumbernauld House, Cumbernauld, Glasgow.

Mr B. J. Russell [A] has changed his address to c/o Porter and Martin [A], PO Box 5029, Wellington, New Zealand.

Mr Anthony W. Thorpe [A] has moved from Wellington to Christchurch, New Zealand, to take up an appointment with **Griffiths and Moffat [A]**, and following his marriage in December lives at 3 Flowers Track, Sumner, Christchurch.

PRACTICES AND PARTNERSHIPS WANTED AND AVAILABLE

Fellow, disposed of practice in north, wishes to acquire a partnership, after a period as assistant, in Southampton or southern district. Capital available. Box 219, c/o Secretary, RIBA.

Member wishes to purchase small or medium size practice in the Midlands, preferably in the Leicester, Nottingham area. Box 220, c/o Secretary, RIBA.

Firm of architects in the west of England require qualified junior partner, about 35 years of age, for small varied jobs of a domestic character, and to take charge of a branch office. Probationary period with view to subsequent partnership for which some capital could be to an advantage, but for which loan facilities might be arranged. Box 221, c/o Secretary, RIBA.

Associate with wide experience in almost all types of project seeks partnership in practice in the area S and SE of London. Moderate capital available. Box 222, c/o Secretary, RIBA.

Established architectural practice offers outstanding opportunity for young associates' immediate partnership. Excellent profit-sharing basis, guaranteed income. Applicants only who have ability and drive and are not frightened of hard work. Amalgamation with another existing practice considered. Box 223, c/o Secretary, RIBA.

Associate MSIA (31) seeks partnership or senior position leading to partnership in London or southern England. 16 years' experience in all building types. Particular interest in administration and organisation. Some capital available. Box 224, c/o Secretary, RIBA.

Young associate, at present operating single-handed practice, would welcome invitation to amalgamate with another large or small practice, or will share his premises and spare capacity for work. Liverpool or SW Lancs. Would alternatively like to purchase existing practice. Some capital available. Box 226, c/o Secretary, RIBA.

The Royal Institute of British Architects, as a body, is not responsible for the statements made or opinions expressed in the JOURNAL

ABS

THE 1960 ABS APPEAL

During the year 1959 there were about 1,500 subscribers to the Architects' Benevolent Society and the Subscription income was £2,900.

This special Appeal of Autumn 1960 was addressed to some 15,000 members of the RIBA within the United Kingdom who were not already on the list of subscribers.

So far, 1,450 out of the 15,000 have responded, promising to give a guinea or more each year by banker's order. Of these 1,450, 660 have agreed to covenant for seven years so that the Society can claim tax rebate. The subscription income will, in consequence, be increased by at least £2,200.

A few subscriptions are still coming in and I am hoping that from now onwards the 1959 figures may be doubled: that is, that 3,000 subscribers may contribute an annual total of £5,800. This will be an enormous help to the work of the Society.

It is never pleasant to ask for money and this special Appeal is not intended to be repeated. People have been generous in their response and I want to say to each: thank you very much.

GRAHAM DAWBARN [F]
Hon. Treasurer.

out
vo-
ome
was
the
who
vers.
have
a or
these
for
talm
will,
least

g in
wards
it is,
e an
e an
society.
oney
ed to
us in
each:

[A]

1981

R

RIBA
tificate
porary
was 'A
Channe
A Certi
awardee
Anthon
Hamps
Archite
Brighto

Victor
£150 f
Educati
Union
The Pri
C. Stre
Hove
tecture,
Brighto
Mentio
Arthur
Road,

Hunt 1
the Stu
Award
A DIPR
Ottawa
Associ

Athens
for Stu
Award
24 Go
(School
Regent

Rome
£425 p
and re
Not A

Neale
for th
Award
MA [A
(Manc
tecture

Arthur
No ap

Henry
A Sch
Geoffr
berna
ment
(Schoo
of Art
Mr Jo
Street
ciatio

RIBA
and £

RIBA
Not 1
able
Micha

AMTR
NW8
Unive

Owen
£250.

RIBA

RIBA Prizes and Studentships

RIBA Intermediate Design Prize: A Certificate and £100 for the Study of Contemporary Architecture in Europe. The subject was 'A Small Air Terminal for Cross Channel Passenger Services'. Not Awarded. A Certificate of Honourable Mention was awarded to 'ZEITGEIST', Mr Michael Anthony Bignell [Student], 13 Ainger Road, Hampstead, London, NW3 (Department of Architecture, College of Arts and Crafts, Brighton).

Victory Scholarship: A Silver Medal and £150 for the Advancement of Architectural Education. The subject was 'A Students Union Building for a Residential College'. The Prize was awarded to 'ABU', Mr David C. Streiffeld [A], 169 Old Shoreham Road, Hove 4, Sussex (Department of Architecture, College of Arts and Crafts, Brighton). A Certificate of Honourable Mention was awarded to 'YTHIR', Mr Arthur George Batt [A], 15 Ravenscar Road, Downham, Bromley, Kent.

Hunt Bursary: A Certificate and £95 for the Study of Housing and Town Planning. Awarded to Mr Jonas Benzion Lehrman, AADPL, AMTPI [A], 416 Talbot Street, Ottawa 2, Ontario, Canada (Architectural Association, School of Architecture).

Athens and Delissa Joseph Bursaries: £175 for Study at the British School at Athens. Awarded to Mr Denis A. Broodbank [A], 24 Godfrey Street, Chelsea, London, SW3 (School of Architecture, The Polytechnic, Regent Street, London).

Rome Scholarship in Architecture, 1960: £425 per annum for two or three years' study and research at the British School at Rome. Not Awarded.

Neale Bursary: A Certificate and £125 for the Measurement of Old Buildings. Awarded to Dr Tom Lowe Marsden, MA [A], 733 Huddersfield Road, Oldham (Manchester University School of Architecture).

Arthur Cates Prize: A Certificate and £115. No applications.

Henry L. Florence Research Scholarships. A Scholarship of £400 awarded to Mr Geoffrey Copcutt, D(A)(Edin.) [A], Cumbernauld House, Cumbernauld Development Corporation, Cumbernauld, Glasgow (School of Architecture, Edinburgh College of Art). A Scholarship of £200 awarded to Mr John Smith, AADPL, [A], 49 Goodge Street, London, W1 (Architectural Association, School of Architecture).

RIBA Silver Medal for Measured Drawings and £75. Not awarded.

RIBA Silver Medal and £50 for an Essay. Not awarded. A Certificate of Honourable Mention was awarded to Mr John Michael Welbank, BA(ARCH), DIP.TP(Lond.), AMTPI [A], 14b Finchley Road, London, NW8 (Bartlett School of Architecture, University of London).

Owen Jones Studentship: A Certificate and £250. Not awarded.

Alfred Bossom Research Fellowships: £250 for Post-Graduate Research. Awarded jointly to Mr Peter David Cowan, DIP.ARCH. (Northern Polytechnic) [A], 227 Wharncliffe Gardens, St John's Wood Road, London, NW8 (Department of Architecture, The Northern Polytechnic, London), and Mr Raymond Osborne Moss, DIP.ARCH.(Sheffield) [A], c/o Architect's Department, South-East Metropolitan Regional Hospital Board, 40 Eastbourne Terrace, London, W2 (Department of Architecture, University of Sheffield).

RIBA Rose Shipman Studentship Trust: A Certificate and £600 for the Study of Architecture. Awarded to Mr John Cecil Turnbull Warren, BARCH.(Dunelm) [A], Coach House, Comptons Brow Lane, Horsham, Sussex (School of Architecture, King's College, Newcastle upon Tyne).

Henry Saxon Snell Prize and Theakston Bequest: A Certificate and £150. (Offered jointly by the RIBA and the Architectural Association for the study of the improved design and construction of hospitals, convalescent homes and asylums for the aged and infirm poor.) Awarded to Mr David William Hubert, DIP.TP (The Polytechnic) [A], Flat 7, 77 Addison Road, Kensington, London, W14 (School of Architecture, The Polytechnic, Regent Street, London).

Sir Banister Fletcher Silver Medal and 50 Guineas for an Essay for the Study of the History of Architecture. Awarded to Mr Christopher Arthur Sykes, 35 Oakwood Avenue, Purley, Surrey (Bartlett School of Architecture, University of London).

Ashpitel Prize 1960 and Sir Banister Fletcher Prize 1960. Awards to be announced later.

RIBA Certificates of Merit for Students of Schools of Architecture Recognised for Exemption from the Final Examination. Certificates of Merit awarded to Mr Garth Warren Janssens, 68 Fraser Road, Perivale, Greenford, Middlesex (School of Architecture, The Polytechnic, Regent Street, London), Mr Granville Thomas Dudley Lewis [Student], 20 Gambier Terrace, Liverpool 1, Lancashire (Liverpool School of Architecture, University of Liverpool), Mr John Laverack Taylor [Student], 38 Westbourne Grove, Goole, Yorkshire (Leeds School of Architecture and Town Planning), Mr Douglas Dean Telfer [Student], West Hill, Elm Grove, West Hartlepool, Co. Durham (School of Architecture, King's College, Newcastle upon Tyne) and Mr David Bruce Walker [Student], 46 Addison Place, Arbroath, Angus (School of Architecture, Dundee College of Art).

RIBA Certificate of Merit for Students of Schools of Architecture Recognised for Exemption from the Intermediate Examination. Certificates of Merit awarded to Mr. Robin Edward Charles Clarke, 228 Court Road, Mottingham, London, SE9 (School of Architecture, The Polytechnic, Regent

Street, London), Mr Angus Lamont MacKinnon MacDonald [Student], 3 Carlile Place, Perth (School of Architecture, Dundee College of Art) and Mr John Lawrence Wynne, 24 Dechmont Road, Corstorphine, Edinburgh (School of Architecture, Edinburgh College of Art).

Archibald Dawnay Scholarship Trust Prizes 1960, Four Prizes of £100 each for the Advanced Study of Construction. Prizes awarded to Mr Greville Lloyd Harris, 'New-Ways', 38 Shrubbery Street, Kidderminster (Birmingham School of Architecture), Mr Mohamed Mahmood Nik, 1a Fenthams Road, Erdington, Birmingham 23 (Birmingham School of Architecture), Mr Eric Walter Marchant [Student], 244 Radford Boulevard, Radford, Nottingham (Nottingham School of Architecture) and Mr Frederick Andrew Stafford, c/o College of Art, Lauriston Place, Edinburgh 3 (School of Architecture, Edinburgh College of Art).

RIBA Henry Jarvis Studentship at the School of Architecture, The Architectural Association, 1960: £50. Awarded to Mr John Robert Gosling, 40 Wanstead Lane, Ilford, Essex.

RIBA Howard Colis Travelling Studentship at the School of Architecture, The Architectural Association, 1960: £40. Awarded to Mr Francis Cuthbert Duffy, c/o School of Architecture, The Architectural Association, 34-36 Bedford Square, London WC1.

RIBA Donaldson Medal at the Bartlett School of Architecture, University of London, 1960. Awarded to Mr David Alan Hutchison [Student], 12 Amberley Gardens, Bush Hill Park, Enfield, Middlesex.

RIBA Prize for Art Schools and Technical Institutions with Facilities for the Instruction of Intending Architects (£10 in Books), 1960. Awarded to Mr John Brown Cossins, 'Fairway', North Road, Havering-Atte-Bower, Near Romford, Essex (Department of Architecture, South-West Essex Technical College and School of Art, Walthamstow). A Certificate of Honourable Mention was awarded to Mr Arthur Butterworth [Student], 5 Bowler Street, Shaw, Near Oldham, Lancashire (School of Architecture, Regional College of Art, Manchester).

RIBA Prizes for Public and Secondary Schools. These Prizes are of a total value of 20 guineas. They are offered for an Essay of not more than 1,000 words, or for sketches or scale drawings of a building or part of a building. The Prizes are offered for competition between boys and girls in Public and Secondary Schools. The Prizes were awarded as follows: 1. A prize of £10 10s. to Nigel Lee Cox of Lancing College for his essay. 2. A prize of £5 5s. to John Lambert, Rowlinson Technical School, Sheffield, for his drawings. 3. A prize of £5 5s. to Alexander McMorran of the County Grammar School, Dorking, for his drawings.

London Association of Master Stonemasons Prize: A Certificate and £50 for the Study of Natural Stonework. Awarded to Mr Colin Edwin Wide, 74 Wardrew Road, St Thomas, Exeter.



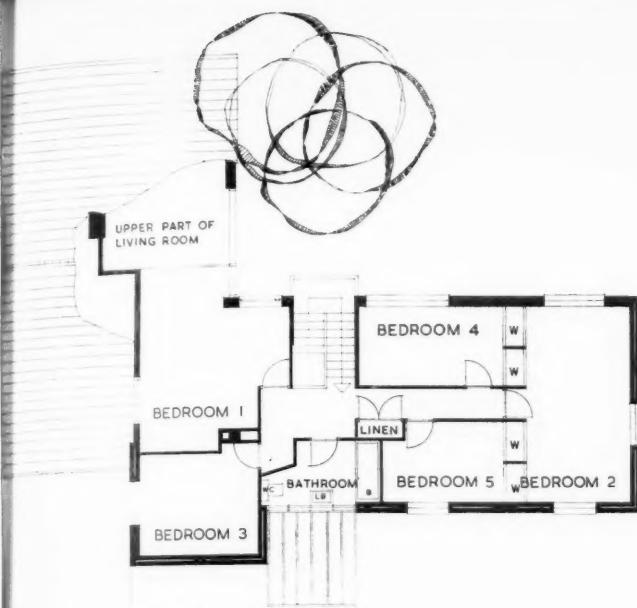
House for Mr A. V. Marques at Oldhill Wood, Studham, Beds.

This house was awarded the RIBA Architecture Bronze Medal for the period 1957-59 in the area of the Northamptonshire, Bedfordshire and Huntingdonshire AA. The architects were Messrs Peter Dunham, Widdup and Harrison [FF'A]. Contractors: Messrs W. A. Nelsey and Sons Ltd.

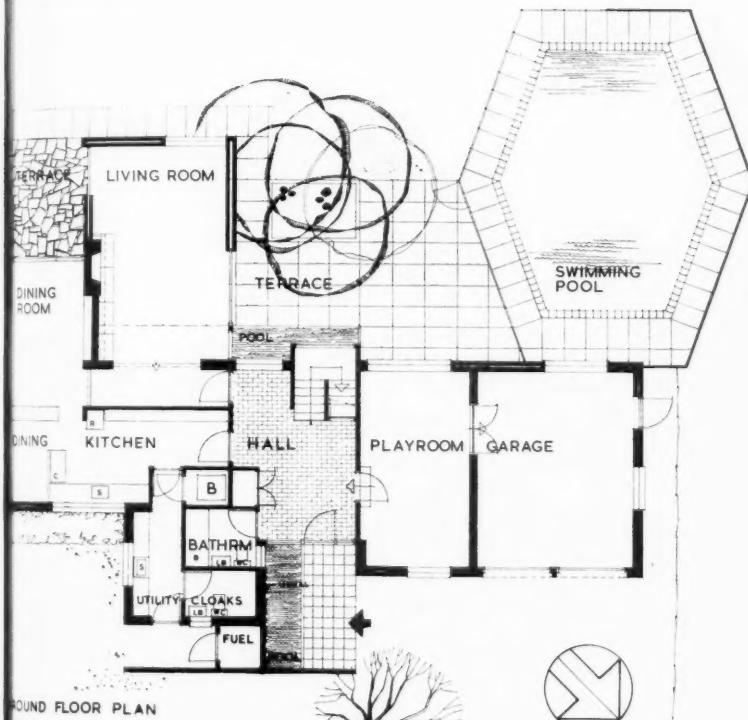
The house is situated in a beautifully wooded estate near Studham. By careful siting the house was planned about a small group of silver birch trees. The house is interesting for its emphasis on three-dimensional open planning, the decorative use of painted murals and water.

The entrance porch is covered with a pergola which filters light

on to a mural painting and a water pool by the side of the main entrance door. A bathroom which opens off the entrance hall serves the nearby playroom, a convenient arrangement for dealing with five small children. The living room has such features as a brick-faced fireplace, a parana pine ceiling and is overlooked by a balcony bedroom. The dining room is integral to the living room and there is also a small additional dining area for breakfast incorporated in the kitchen. From the living room access is made to a terrace built around the group of silver birches and incorporates a swimming pool and a small decorative pool of water, which like the pool of water by the porch, can be seen from the entrance hall.



FIRST FLOOR PLAN



GROUND FLOOR PLAN



Accommodation:

Living Room
Dining Room
Five Bedrooms
Two Bathrooms
Kitchen
Utility Room

Photographs, with exception of entrance front, by courtesy of the 'Ideal Home' magazine





Shop Units in Development Schemes

Notes prepared by the Shops and Stores
Sub-Committee of the Architects in Industry Group

Architects in private practice, local government and industry are daily being asked to design development projects which include lettable areas for shops and stores.

The apparent lack of technical information available on the basic requirements of prospective tenants so often leads to unnecessary or additional work or to unsatisfactory premises, that the Shops and Stores Sub-Committee of the Architects in Industry Group have issued the following notes as a guide to architects concerned with such developments.

Later it is hoped to make this information generally available in more detailed form, through the RIBA Technical Information Service.

Tenancies may vary from the small single floor lock-up shop to the large multi-storey department store. As tenancies are not always decided upon before commencement of building, the first section of these notes refers to general principles which should be observed when designing for shops and stores; requirements for certain specialist tenancies follow. There are obviously differences between the smallest and the largest units, but usually there is some direction given to the developing architect as to which of these is likely to be planned for in his scheme. To meet particular requirements, early co-operation with the tenant's architect as soon as possible tenancies are established, is essential.

1. Structure

Differences in levels between finished ground-floor level and pavement should be avoided. If there is a difference, it is essential to drop the front bay of structural slab to allow for a ramped lobby.

Shop arcade depths may vary from 3 ft. to perhaps 25 ft. and slabs must be calculated to carry the necessary depth of screed. A minimum fall of 1 in. from finished floor level to pavement should be allowed.

The structural shell should be left without finishings, except in lavatories, etc., until tenant's requirements are known.

The structural system should be as flexible as possible to accommodate specialised requirements for ducts, staircases, etc.

A standard unit width of 20 ft. is recommended, except for certain specialised units requiring less, or more space than the average trader.

Columns obstructing the shop frontage should be avoided and also any other obstructions restricting the clear frontage.

Perimeter walls should be flush and free from obstructions such as downpipes, piers and ducts.

In designing foundations and structure, margin should be allowed for possible additional loading as in certain cases the tenant may require specially strengthened floors. (See Appendix.)

Beam soffits should be minimum 10 ft. clearance from finished floor level to soffit.

Many tenants provide false ceilings as part of their lighting and shopfitting treatments. The construction should make this possible.

Floor to floor heights for smaller units should not exceed 13 ft. to be increased to 15 ft. in the case of the larger store. Customers cannot easily be induced to mount long flights of stairs, and unnecessary stair climbing is exhausting and time-wasting for staff and reduces the sales potential of upper floors.

All floor slabs should be designed to accommodate screed, minimum 1 1/4 in. for smaller units, maximum 3 in. for larger and specialised units requiring services in screed.

Provision for customer-access staircases should be of adequate width and certainly not less than 3 ft. 6 in. clear between handrails. These staircases will have to be in positions different from service stairs and, if necessary, trimmings for alternative locations should be provided. Many tenants prefer to install their own customer staircases in prepared openings.

Natural light and ventilation will probably be required for staff accommodation. It has to be remembered that many shop staffs include both sexes, and toilet accommodation should be provided accordingly.

2. Services

Tenants should be free to provide their own lighting, heating and ventilating systems. As it is seldom possible to rely throughout on natural lighting and ventilating, the design of the structure must allow for ducts and outlets to tenants' requirements. Lantern lights are seldom helpful to sales areas. The curious custom of the landlord's architect providing one light point per 100 sq. ft. of sales area is quite impracticable and should be discontinued.

The tenant should provide his own electrical installation (except for lighting lavatories) from the tenants' meter. Every tenant will require drainage and water connections to a sink for staff use. Some tenants will also require extra plumbing and drainage connections where necessary. Meter and control units should be sited at the rear of the shop wherever possible, and if service entries are at the front, service mains must be taken sufficiently into the shop to avoid the shop windows.

It is advisable to provide in each unit a spare floor duct from front to rear to take additional services.

The provision of a central service and meter room with feeder ducts to each tenancy in large developments is an excellent practice.

3. Fire Precautions

The developing architect should draw the attention of the tenant or his architects to any special requirements of the local authority with regard to standards of fire resistance or means of escape applying to the development as a whole.

4. Goods Access

Goods vehicles require up to 14 ft. headroom and need clear standing space for loading adjacent to the shop. Steps must be avoided so as to allow for unloading by trolley. Double doors opening inwards are wasteful of space in service entries. Requirements for waste storage and collection and/or disposal vary widely according to the trade, and must be taken into account as in some trades it is a major problem.

5. Circulation

Ideally most traders prefer ground-floor trading. The single-trade shop, trading on more than one floor must have customer-access stairs sited within easy reach or sight of the entrance and may not require in addition a separate staff staircase.

6. Front Elevation, Fascia and Advertisement

Development architects should respect the individuality of retailers' shop fronts. They should remember that a trading name or description which may seem advertisement to them, is the essential means of trading to the shopkeeper, and should not be unduly restricted or reduced to a uniformity without meaning. Care should be taken in selecting landlord's materials to provide a neutral setting and the minimum amount of maintenance. The front presentation should not be unduly restricted by low canopies, deep beams or fascia treatments requiring uniform materials.

Except where canopies are provided or the development faces due north, allowance must be made for sunblind boxes at height to meet police requirements (the usual minimum of 'throw' at pavement level is 8 ft.). Canopies, where provided, should be so designed in height and protection as to give adequate shade to the windows and without causing window reflections.

Allowance must be made for access through the structure for wiring and fixing to illuminated fascia signs.

Pilaster treatments, where part of the developing architect's design should be related to the glass line of the shop windows, and must provide for the necessary making out to suit the profile of the shopfront.

7. Security

Burglar bars and burglar resistant rear doors are essential to some tenants and this should be remembered in relation to design of windows in the building.

Conclusion

The above notes are not fully comprehensive, but it is hoped they will help to draw attention to the more immediate problems which should be considered by the developer and his architect in the design of shops and stores for letting. More detailed information is given in the appendix.

Appendix

Specialist Requirements

Shop tenants divide basically into two groups: large, and small or standard units, respectively.

Large units, e.g. Departmental Stores, Supermarkets and Large Retail Stores.

1. Departmental Store

The complexities of the design of the departmental store require their own special study and may include specialised departments having the requirements of some of the units described below. Tenancies of this magnitude are usually determined before commencement of building operations and the project will in such cases be planned in conjunction with the tenants or their architect. The development architect should, however, remember that it may be necessary to co-ordinate the requirements of such a tenant with those of the unit shop forming the main subject of these notes, and he will have to reconcile the sometimes conflicting requirements of both in order to provide a satisfactory solution.

2. Supermarket

By definition a supermarket, as distinct in its requirements from those of the smaller self-service grocery shop, is one of over 3,000 sq. ft. of sales area, and the scope of its merchandise includes meat, dairy produce, fruit and vegetables, in addition to groceries and certain non-food items.

Staff accommodation, preparation and storage area normally require as much space as is allocated for sales, although this proportion decreases as the sales area increases.

3. Large Retail Store

Under this heading should be classified stores whose sales areas vary from 5,000 sq. ft. to 40,000 sq. ft., on one or more floors. This type of store does not usually favour any development which includes more than two floors, either basement and ground floors, or ground and first floors, as selling areas. The requirements for stockroom, goods reception, staff quarters and offices are one-and-a-quarter times the total amount of selling space in the store.

Small or Standard Units

In any shopping street by far the greatest number of shops using small or standard units are the so-called speciality shops, some being enterprises with a single owner, others united in a chain of multiples owned by large companies.

Speciality shops fall into three broad categories; those which sell one line, such as the bookseller, confectioner, florist, jeweller, butcher, fishmonger, and shops for fashion wear, footwear and accessories; those which deal with various lines, the chemist, grocer, stationer, hardware, furniture, food and provision stores; and finally those which sell a service, such as optician, hairdresser, shoe repairer and dry cleaner.

Most of the smaller speciality shops operate on one floor only, or at the most with a basement storage space in addition. There always remains the problem of deciding the most economical use of upper floors. The primary factor in such considerations must be the importance of the shop itself and all other factors should be balanced economically and aesthetically against this.

The upper floors may be designed as flats or maisonettes, used for staff and stock accommodation in connection with the shop, or let to a separate tenant as offices or showrooms of some kind; this will probably mean a separate entrance from the street which will result in reduced frontage for shop display. Alternatively the shop front can be arranged so that the entrance to the upper floors does not come directly on the street frontage, thus lowering the rental value of the space on upper floors. For instance, a ladies' hairdressing salon can be accommodated to advantage at first-floor level, but

representation at street level with adequate entrance, reception and display facilities is most desirable. In such cases floor to floor heights and design of the staircase must be carefully considered. If the shopkeeper uses the first floor for his own purposes, whether this is for sales or storage, he may like to express this fact by adopting the tallfront treatment. In the case of flats or maisonettes, it may be possible to provide access to the rear and across a flat roof by means of an external staircase.

It should not be forgotten that if the business succeeds it may need to expand and in general this can take place only in two directions – upwards and, of course, sideways, though it is occasionally possible to utilise a basement where there is enough headroom and if it has not been entirely allocated to heating or other services. Upward expansion demands a careful treatment of staircases, which should be of greater

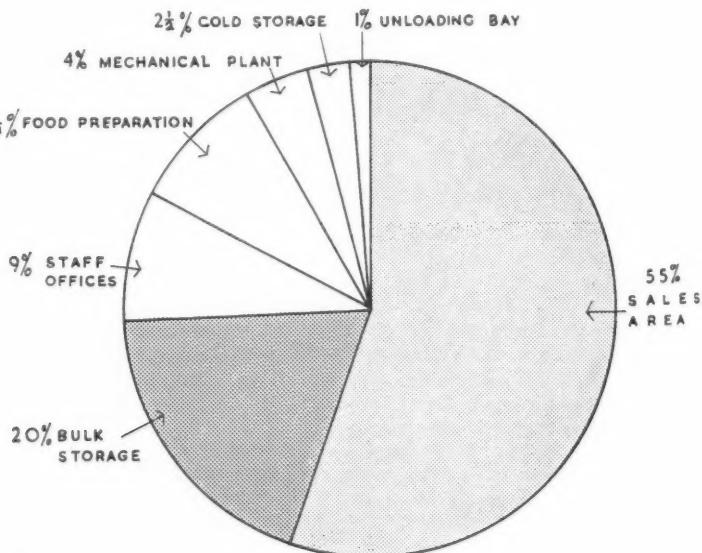
width than necessary for purely storage purposes. Sideways expansion necessitates the removal of division walls which, if of load-bearing construction, will entail expensive structural alterations. The construction of the building should envisage such types of possible future expansion.

In shops with a frontage and width of 20 ft. to 35 ft. clear selling space is essential, and there is absolutely no excuse for columns and other obstructions. Although such shops vary considerably and in most cases contrast volubly with their neighbours, the problems are basically the same in all cases. All the general notes on structure and services previously mentioned apply in particular to the standard unit, and in view of the extreme diversity of type of trade which may utilise any particular unit, flexibility of design in shopfitting within the structural frame must be easily possible without any structural hazards being encountered.

Examples of Requirements for Certain Specialist Trades

TYPE	SUPERMARKET		
Frontage	A minimum of 35 ft. is acceptable and between 40 ft. to 50 ft. is recommended. Supermarkets with sales areas exceeding 10,000 sq. ft. exist and frontage should of course be proportional.	Staff	Staff staircase should be provided at the rear of the store.
Floor to beam height	Storage areas are often situated at first floor level and live loadings of up to 200 lb. per sq. ft. may be applied. A basement for storage and food preparation is acceptable as an alternative to space on an upper floor, although this arrangement brings its own problems of ventilation, vertical circulation, etc.	Goods	Consideration should be given to likely demand for lifts, hoists or conveyor belts. Floor apertures, lift shaft, well, etc., are normally developer's responsibility.
Floor loading		Finishes	
Column Spacing	As few as possible to permit maximum flexibility.	Floors	These should be impervious in preparation and sales areas, dustproof and easily cleaned in other storage areas.
Special Services		Walls	These should be of hard durable material with suitable finish, easily cleaned.
Electrical	Likely to be up to 14 watts per sq. ft., taking an average of sales and service areas. Early consideration should be given to the provision of a sub-station if it is found to be necessary.	Ceilings	
Water	Washing facilities have to comply to the Hygiene Regulations, 1955. Special requirements may be needed for preparation rooms.	Staff Accommodation	Accommodation should be provided on the basis of about 12 staff to each 1,000 sq. ft. of sales area, usually in the proportion of three females to one male.
Gas	Provision should be made for gas intake.	Toilets	
Heating	A substantial ventilation or air conditioning installation is usually required and space for the plant must be provided.	Cloakrooms	
Ventilation		Kitchen	
Drainage	Grease traps may be required.	Other Areas	
Vertical Circulation		Stock Provision and Handling Specialist Requirements.	
Public	Stairs are frequently required at the front of the store, for access to a coffee bar or upper sales floor.	Equipment	Provision should be made both for an incinerator to deal with waste disposal and a plant room to house the compressors serving the cold rooms and a refrigerator display cabinet. Also grease traps in food preparation areas are normally required.
		Delivery	Large vehicles, over 30 ft. long, are customarily used for delivery purposes, and adequate access and turning circles should be provided.

Diagram showing space allocation for Supermarket.
These statistics are based on a Supermarket of approximately 8,000 sq. ft.



TYPE

Floor to beam heights

LARGE RETAIL STORE

A finished ceiling height of less than 12 ft. is generally unacceptable. On the other hand a floor to floor height of more than 16 ft. is undesirable if a first floor sales area is intended. 120-170 lb. per ft. super on floor slab.

Floor loading
Column Spacing

Because of the necessity for free circulation by customers small spans should be avoided. A span of up to 30 ft. in either direction is one which will normally permit the developer (if using structural steel) to keep within limits of standard steelwork sections except where tower block supports increase loading. Spans in excess of this may well lead to complications, and require deep structural beams or lattice girders.

Special Services

Electrical

A large number of stores are operating on 50 lumens for the sales area. Available load should allow as much as 20 per cent for increases.

Water

Adequate storage facilities up to 600 gallons to be provided, usually above roof level, in addition to main supply.

Gas
Heating

Meter room at first floor level.

Early consultation with tenant should be sought to establish method of heating preferred. It is sometimes better to allow tenant to provide his own heating as individual requirements are bound to differ. If a separate boiler house is required, it is essential to establish the disposition of same. With gas heating, it is likely that the boiler house will need to be accommodated at a level above the sales floor.

Ventilating

Apart from the provision for ducts which must be made in the structural slab. The developer's architect should ascertain what type of ventilation system is required by the tenant, remembering that if a basement sales area is involved this may require a system of 20 air changes per hour, and call for the provision of a plant room at high level.

Drainage

Wherever possible avoid under floor drains. If unavoidable siting of manholes is of great importance.

Vertical Circulation

Public

Allow the occupier as much flexibility as possible, designing the structural grid to permit the tenant to select alternative positions for staircases. A width of 9 ft. overall hand-rails will allow free movement both up and down and permit a centre hand rail. A width of 10 ft. or 11 ft. will not allow more people to use the staircase, but present problems as the width on either side of the central hand-rail is more than is needed for safe ascent and descent. However, a 12 ft. width permits the staircase to be divided into three lanes with some advantage.

Staff

Siting of staff staircases is important and at least one to be a staff exit from the building—minimum width 3 ft. 6 in.

Goods

Whilst main goods lifts may be provided in the developer's scheme, it is likely that goods circulation lifts will need to be put in by the tenant. Siting of these is important and should be established early in the planning stage. Common loading requirement is 20 cwt. with a speed of 100 ft. per minute.

Finishes

Floors

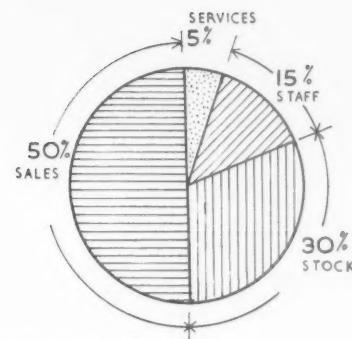
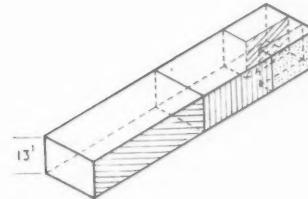
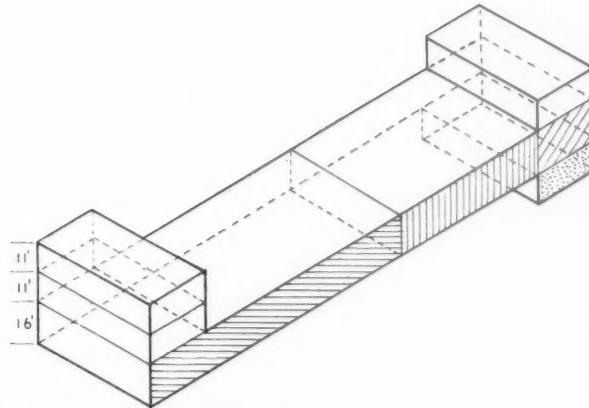
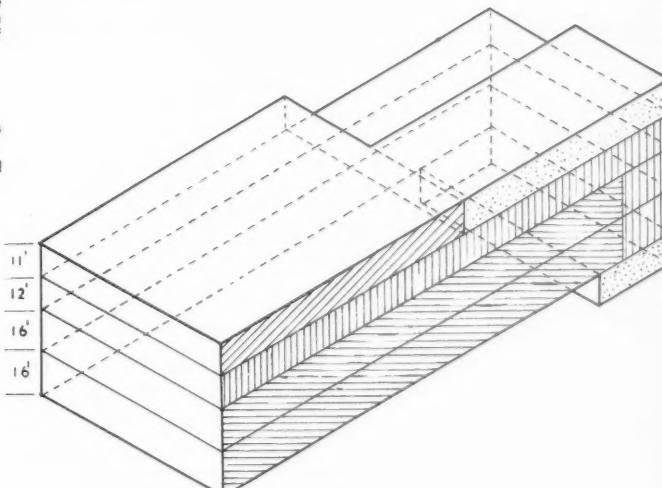
May vary from 4.5 lino to 1½ in. terrazzo tiles according to tenant's requirements.

Walls

Frieze only need be plastered. Tenant will usually provide finish up to 8 ft.

Ceilings

False ceilings by tenant on built in hangers.

**Diagram showing typical space allocation****Small shop unit: 20 ft. by 100 ft.****Medium shop unit: 50 ft. by 200 ft.**
(typical New Town development)**Large store unit: 50 ft. by 200 ft.**

Staff Accommodation

Toilets

Generous allowance to toilet accommodation must be made, particularly where a large number of girls are likely to be employed. A fair basis would be one WC for every 1,500 sq. ft. of sales area. Provision must be made in the building for a flue from the incinerators which will need to be provided in the toilets, and where a multi-storey building is affected this flue would have to be carried full height.

Cloakrooms

Kitchen

Other areas

Stock Provision and Handling

Specialist Requirements

Delivery

Tenant's requirements to be ascertained.

Varies according to size of units.

Many vehicles require up to 30 ft. to pull off the street, and an adequate bay should be provided for exclusive use of tenant.

TYPE

LADIES' HAIRDRESSER

Floor to beam height

10 ft.

Floor loading

100 lb. per foot.

Column Spacing

20-ft. centres.

Special Services

Electrical

20 watts per sq. ft. A 3-phase supply is essential. Minimum cold water storage 300 gallons. 1½-in. feed to boiler. 1½-in. mains supply for drinking purposes. 1½-in. feed to fittings.

Gas

1½-in. main supply where using gas-fired boiler to provide hot water.

Drainage

4-in. LCC connections for toilets. 2-in. LCC connections for basin wastes. 1½-in. anti-syphon connection.

Heating

Central heating is a disadvantage. Local electrical heating required for reception and staff areas.

Ventilating

12-15 air changes per hour.

Vertical Circulation

Public

Floor to floor heights should be the minimum and not exceed 10 ft. where possible. Staircases should have a width of not less than 3 ft. with generous landing space.

Staff

A staff staircase is not generally called for.

Finishes

Floors

PVC tiles, mosaic, carpet are the finishes usually applied. Smooth sand and cement screed is required.

Walls

All forms of decoration are applied, and in many cases a cladding to the structural wall is called for.

Ceiling

A suspended ceiling is invariably used to conceal services and permit recessing of lighting fittings. This ceiling is generally 8 ft. from finished floor level to give a domestic scale.

Staff Accommodation

Toilets

Toilet accommodation is required for both male and female staff and the average unit requires only one WC and one LB for each sex. An additional toilet with WC and LB is desirable for customers' use, this taking the form of a powder room.

Cloakroom

Kitchen

Staffroom

Specialist Requirements

Lockers are usually provided for staff to hang coats and leave possessions.

A small kitchen is desirable for providing refreshment for both staff and customers.

A room is provided for staff to rest, take refreshments, and house lockers.

Adequate drainage facilities. Adequate electrical supply. Adequate cold water storage provision, with sufficient head of pressure. Provision of water heating by gas boiler with flue. Allowance for good ventilation.

TYPE

FISHMONGER

Floor to beam heights

Floor loading

Column spacing

Special Services

Electrical

Generous supply needed for refrigerated display and storage. Three-phase is desirable.

One point required for washing down, and two or three for preparation of fish. It is usual for the supply company to insist on a metered supply.

Supply required for singeing purposes and for boiling shell fish.

Water

Through ventilation supplemented by extractor fans.

Gas

Glazed channel in floor to take waste.

Heating

Ventilation

Drainage

Vertical Circulation

Public

Rear access and small open yard desirable.

Staff

Goods

Structural floor ready to receive impervious surface such as tiles or terrazzo. No step at entrance, and laid to falls for washing down and ideally this should be away from the building line.

Should be left ready to receive impervious wall lining up to about 5 ft. minimum; above this plaster is adequate.

Floors

Walls

Ceilings

Staff Accommodation

Toilets

Cloakrooms

Kitchen

Other areas

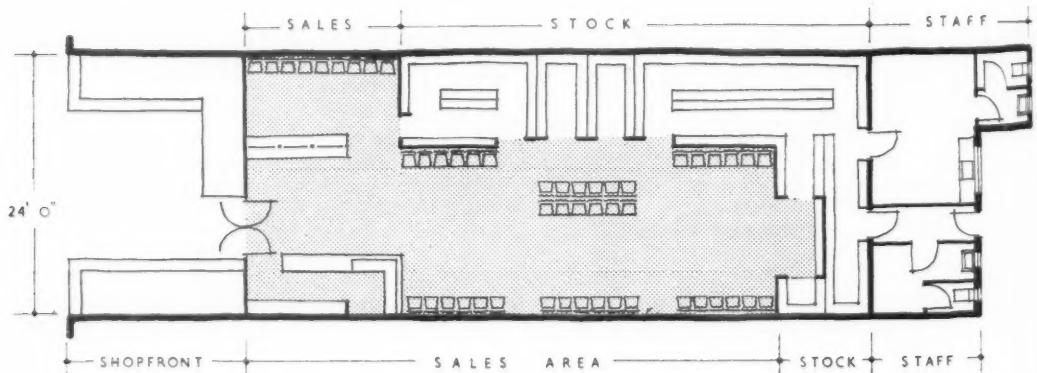
Stock Provision and Handling

Specialist Requirements

Space allocation

as applied to

Single Floor Shoe Shop



Practice Notes

PRACTICE QUERY

Provision of drawings and copies of drawings (RIBA Scale of Professional Charges)

Q: We would like an interpretation of Clause 1, New Works, of the Scale of Charges revised on 1 October 1960.

The question is whether the architect's fee covers 'preparing' two copies of all drawings, etc. Section (ii) makes it clear that the architect's fee is exclusive of the cost of all prints. We feel that 'preparing' does not mean the supply of prints free of charge, but that 'preparing' consists in the colouring of prints or in special notes that the architect may be required to mark on such prints.

A: The RIBA Council, in sanctioning this amendment, agreed that henceforth the architect would be entitled to make a charge in addition to the basic percentage fee in respect of the preparation and provision of drawings and documents and copies thereof prepared in connection with the building contract. The position previously had been that under the earlier Scale the architect provided two copies of the drawings and documents mentioned in Clause 1, for the contractor's use under the contract and the charge for this was included in his percentage fee. He also provided free for the client's use at the end of the contract, small scale drawings showing the main lines of drainage and other essential services as executed. Under the new Scale the architect is entitled to charge in respect of both these items.

RIBA SCALE OF CHARGES

Attention is called to Clause 2 of the Scale which requires *prior written agreement* between client and architect as to the percentage fee to be charged for works to existing buildings. It is important that this clause should be strictly complied with so that no misunderstanding can arise when the architect presents his account.

RIBA FORM OF CONTRACT

Retention Money. The Practice Committee have recently considered a suggestion of the Joint Consultative Committee of Architects, Quantity Surveyors and Builders that in the case of reputable contractors chosen, for example, from a selected list for tendering, architects may consider reducing the amount of certified value retained substantially below the figure of 10 per cent mentioned in the Appendix to the Form of Contract.

The Practice Committee are fully in agreement with this suggestion and commend it to members.

(Previously published in the January 1957 JOURNAL.)

NATIONAL JOINT COUNCIL FOR THE BUILDING INDUSTRY

Building Wages and Hours. The National Joint Council for the Building Industry, at its statutory meeting in London on 12 January, reviewed the wage rates of building trades operatives as required by

the constitution of the Council and found that an increase in wage rates of 4d. per hour was due to take effect on 6 February, under the industry's sliding scale agreement.

The Joint Council also received the report of its committee which has been discussing working hours and wage rates and approved the recommendations of the committee for a settlement of both issues. Under this settlement the working hours of building trades operatives will be reduced from 44 to 42 with effect from 2 October 1961, and the Grade A standard rate for craftsmen will be advanced to 5s. 6d. From the same date there will be modification in the matter of overtime control and of the present regulations on meal breaks.

Note.—The present craftsmen's Grade A rate, which operates throughout England and Wales, except London and Liverpool, is 4s. 11½d. an hour. With effect from 6 February 1961, it is 5s. an hour, and with effect from 2 October 1961, it will be 5s. 6d. an hour. In London and Liverpool all building operatives are paid 1½d. an hour above the Grade A rate.

The building labourers' rate is 7½d. an hour below the craft rate.

IN PARLIAMENT

Planning Appeals in London. Mr Stonehouse asked the Minister of Housing and Local Government and Minister for Welsh Affairs whether he was aware that it takes five months in the County of London to arrange planning appeals; and whether he will appoint more inspectors in order to reduce this period.

Mr Brooke: Yes; and I am doing so. But the hon. Member will realise that recruitment and training of people for this highly specialised work cannot be done very quickly. (13 December 1960.)

MINISTRY OF HOUSING AND LOCAL GOVERNMENT

Housing Act, 1957. Appropriation of land acquired compulsorily under part III. The Minister of Housing and Local Government has been giving consideration to the arrangements covering the appropriation to housing purposes of land acquired compulsorily under Part III of the Act.

The requirement in section 47(1)(a) of the Housing Act, 1957, that such land may be appropriated to other purposes only with the Minister's approval, has been removed by section 23(1) of the Town and Country Planning Act, 1959. As, however, section 23(2) of that Act requires the consent of the appropriate Minister to be obtained to the first appropriation of any land acquired compulsorily, the appropriation to Part V purposes of land acquired in pursuance of a compulsory purchase order made under section 43 of the Housing Act, 1957, still needs the Minister's consent. The Minister thinks, however, that it would be unnecessarily burdensome if local authorities were required to apply for formal consent in every individual case.

Accordingly, in pursuance of his powers under section 30(4) of the Town and

Country Planning Act, 1959, the Minister hereby gives to every local authority any consent required from him under section 23(2) of the Town and Country Planning Act, 1959, in respect of the appropriation to the purposes of Part V of the Housing Act, 1957, of any land acquired in the exercise (directly or indirectly) of compulsory powers¹ under Part III of the Act, where the authority have stated, either before confirmation of the compulsory purchase order or at the time of application for loan sanction for such purchase, that they intend to use the land for the purposes of Part V of the Act. (Circular No. 62/60.)

INDEX TO PRACTICE NOTES

An index to Practice Notes published in the JOURNAL from January to September 1960 has been prepared, and copies may be obtained free of charge on application to the Secretary, RIBA.

NEGIGENT SURVEY — MEASURE OF DAMAGES

Moth, before buying a property from Carpet, instructs a surveyor to examine the premises, write a report and advise him as to the proper price to pay. The surveyor negligently does his work, fails to note all sorts of defects like dry rot and bulging walls, with the consequence that Moth pays too much and if the house is to be made fit he is going to have a heavy bill for builder's work. Naturally he will tackle the surveyor about this and if liability is not admitted by the surveyor (or his insurance company) he will sue him. Moth assumes that the measure of the damages he is entitled to recover is the cost of doing the repairs. After all the surveyor has been guilty of breach of contract in preparing the report without reasonable care. It must have been in the contemplation of the parties that if he were in breach Moth would have a bill for repairs to foot, applying the classic rule under (Hadley v. Baxendale).

The surveyor, however, flourishes (Philips v. Ward (1956), 1 WLR 471) in Moth's face and says the correct measure of damage is not the cost of repairs but the difference in value of the property as bought and the property as if it had been as described. There is one immediate criticism of that test in that it leaves the whole matter really to experts, e.g. what would the hypothetical person have paid for the house with full knowledge of the defects? What was the market value of the house as described? Both figures can be almost anything, according to which valuer the court prefers. How does the court know which valuer to prefer? On the other hand estimates by two or three builders, while they will not be likely to underestimate the cost, will be figures that are practical and not theoretical. However, leaving that comment on one side, the position is that the Court of Appeal so ruled in (Philips v. Ward).

On careful consideration, it is thought that the decision, if it is to be regarded as a broad proposition of law to be strictly applied, and not a decision on the particular facts, is not one that the House of Lords would necessarily accept. Why

¹ The exercise (directly or indirectly) of compulsory powers is defined in section 30(5) of the Town and Country Planning Act, 1959.

should the general rule under (Hadley v. Baxendale) be ignored?

Those who read Mr Justice Paull's judgement in (Hood v. Shaw) (*The Estates Gazette*, 10 December 1960, at page 1293) near the foot will have observed the hesitation with which he turned to apply the (Philips v. Ward) rule. He said: "... I think you must base your figure in some way on the sort of cost it would take to put the house into the condition you have the right to expect it to be. However, it is not necessarily that figure; it is the difference in value, but I think that that figure is probably a very good basis to get at the difference in value". It will be noted that Paull, J., also awarded damages for inconvenience while the work was being done, being damages for alternative accommodation.

The way Denning, L. J., put the argument in (Philips v. Ward) was based on certain figures found by the Official Referee. The purchaser paid £25,000, but the property was worth, so held the OR, £21,000. The cost of repairs was alleged to be £7,000. That would mean, said Denning, L. J., that he would get the house for £18,000 (£25,000 minus £7,000).

But if he has to repair the house to bring it up to the reported standard (presumably a reasonable standard of repair)

why should the purchaser have to pay some of it out of his own pocket when it has all been caused by the negligence of the surveyor?

Other arguments to support the decision were that the purchaser would get tax relief on account of the repairs and, second, that he would have new parts of the house instead of old parts. Now that last point is a question of fact. Of course, the purchaser is not entitled to be put in a better position than he would have been if the contract had been carried out, but it is not his fault if the only way of making good is with new material. He did not want new material, because he never bargained for it. It is suggested that that point is unfair to the purchaser. Whether there is much comfort in the tax point presumably depends on the amount of Schedule A the purchaser in fact is called upon to pay over the years.

At the present time the law is set out in (Philips v. Ward). However, it is repeated that it is felt that what is there laid down can work unfairly if applied at all rigidly. It is suggested that any surveyor sued on facts of this kind should not regard the case as a 100 per cent shield.

(Reproduced by courtesy of the Editor of *The Estates Gazette*.)

broaden the basis for their own work and raise standards everywhere.

(Published by Bouwcentrum, Rotterdam.)

Windowless Stores

The question of windowless stores was discussed by the Shops and Stores Sub-Committee of the Architects in Industry Group on 4 November when representatives of the National Women Citizens' Association put forward their views with regard to the resolution carried by the NWCA urging that the building of windowless departmental stores should be discouraged. It was generally agreed that assistants were happier if they could be near windows and could participate at least visually in the life going on outside. From the customers' point of view colour-matching was the main problem to be faced. Food stores presented a difficulty in so far as many types of food deteriorated more rapidly under daylighting. The architects present at the meeting were doing all they could to open up closed surfaces and include windows in their store developments. There was a tendency also to integrate the shop-front spatially with that of the street outside, often as a means of attracting customers to enter the store.

Hospital Abstracts

The first issue of a monthly journal surveying the world literature relating to hospitals was published on 2 January, under the title *Hospital Abstracts* (HMSO 5s. net).

This new series is based on the many periodicals, books, reports and other material published in various countries on matters relating to hospitals and hospital services (excluding strictly medical and related professional matters) which are now available in the Ministry of Health library. Each issue will contain about 150 summaries or notices, in English, of periodical articles, books, and other publications from all parts of the world.

It is the hope of the Minister of Health that the new monthly will prove to be of considerable value to hospital authorities and staffs by keeping them up to date with hospital affairs at home and abroad.

The Mannesman Office Building, Düsseldorf

The Mannesman Office Building in Düsseldorf is an interesting new high block on the banks of the Rhine. It was comprehensively described in the German journal *Deutsche Bauzeitschrift* last year and a translation, with illustrations, has been made by the Library of the Building Research Station. The description is unusually detailed and gives considerable information about contemporary German high-building technology. A limited number of copies is available free from the Librarian of the Building Research Station, Watford, Herts.

Coverage includes: site problems including relation to earlier buildings by Behrens, internal planning, structural design including foundations, general construction details, erection technique, services, façade cleaning facilities and technical data.

Building Materials Producers: a National Policy

The following statement has been issued by BMP:

Nearly ten years have passed since the National Council of Building Material Pro-

Technical Column

Discussion on The Responsibility of the Job Architect, Tuesday 21 February 1961 at 6.30 p.m.

This is the first of two discussion evenings, organised by the Technical Information Committee, at which the topics to be discussed concern the organisation of architects' offices. The second discussion evening will be held on Tuesday 21 March at 6.30 p.m. when the subject under discussion will be 'The Purpose and Organisation of Development Groups'.

The discussion of 'The Responsibility of the Job Architect' will be introduced by Mr Anthony Williams, AADIPL. [4], Assistant Secretary of the RIBA. Speakers will include Mr Henry Swain, AADIPL. [4], Deputy County Architect of Nottinghamshire, Mr John Kitchin, DIP.ARCH. (Birmingham) [4], of the Ministry of Education and Mr Thurston Williams, AADIPL. [4], Chairman of the Association of Official Architects. Members of the RIBA Office Survey Team will also be present.

'Habitation' edited by J. H. van den Broek (Rotterdam) at the request of the International Union of Architects

This series of three volumes on the world problem of housing was initiated at the Fourth Congress of the IUA in response to the great need for a documentary work that would record, in detail and in a manner facilitating comparison, the development of

housing in many countries after the Second World War.

Each volume deals with a number of countries, from the aspects of programme, design and production.

The programme section consists of a general survey for each country of the housing standards obtaining there, the legislation concerning the building of houses, and the manner in which housing is financed. The national programme is then compared with the national need.

In the section on design the various types of dwelling are treated, namely, one-family houses, apartment houses, unités d'habitation, special forms of housing and district plans. The most important results achieved as regards normalisation, standardisation and modular co-ordination, development of standard ground-plans, standard houses and elements, and details in the field of design and equipment of dwellings, are surveyed.

The section on production contains a documentation of traditional production methods, series production and newly developed building methods. Attention is paid to the method of inviting tenders and the influence of this on the way in which the work is carried out.

This book aims to provide, for all who are in any way concerned with building and housing, information about the most important work achieved in this field in many countries and an opportunity to make comparisons, draw conclusions, and in this way

ducers last published its policy for building. During this time changes have taken place which call for a re-appraisal of the Council's views to bring them into line with the new circumstances. Rigid physical controls, such as those setting a ratio between private and local authority housebuilding and the system of licensing for repair and maintenance, have been ended, while the concept of maintaining a 'Reserve' of specific building projects held in readiness to put into operation when serious national unemployment threatens has been abandoned by the Government on the grounds of impracticability.

Nevertheless, the level of building activity remains subject to broad direction by the Government. In the private sector this is achieved by the incidence of economic policy for the time being upon the general level of capital investment; in the public sector building activity is regulated by limitations imposed upon the amount of capital expenditure which the various spending agencies concerned are permitted to incur during each financial year. By these means, the Government are able to bring the building industry within the scope of their economic planning.

It is axiomatic, therefore, that a change in economic circumstances, whether brought about by either external or by internal conditions, or by both in combination, will give rise to a re-shaping of economic policy and a consequential short term change in the pattern and/or the total volume of capital investment. It would thus be unrealistic to recognise the need for economic planning in principle and at the same time to resist any such changes in capital investment policy as the new economic plan may dictate. BMP has, therefore, recognised that the Government may be right in seeking to change the level of building activity in the short term, either in individual sectors or in total, in some circumstances since the long-term prosperity of the building and allied industries must in the final analysis rest upon a healthy national economy, with which the Government must be expected to be concerned.

This is not to say, however, that BMP is bound to support every attempt which the Government may decide to make to influence the course of short term trends in building activity. Inaccurate assessments by the Government of the current and future trends lead to unnecessary decisions of this nature, while the experience of the building materials industries in the post-war period shows that insufficient consideration has been given in the past to the time lag which normally takes place between the taking of a decision and its effect upon building operations on the site and upon the production of building materials and components. Thus, restrictions may tend to affect the building materials industries at a time when re-expansion of the remainder of the economy is returning; they are maintained longer than the changing circumstances justify; and their impact upon the supply industries is underestimated.

It is the importance of these aspects of economic planning which prompted BMP to set up a special Forecasting Panel which keeps under constant review the various factors likely to influence the future level of building activity. Furthermore, the view has long been held by the BMP that the productive capacity of the building labour force

(whose numerical strength has changed only marginally during the past ten years or so) exercises its own limitation on the volume of building work which can be undertaken by the building industry. The general improvement in productivity, which should result from better organisation and the increasing use of mechanical plant, should be relied upon to provide the year-by-year increase in the output of the building industry needed to keep pace with the general long term expansion of the nation's economy. The need for new buildings of all kinds is sufficient to keep available building operatives fully occupied for many years to come, and any official policy designed deliberately to reduce the output of the industry below the maximum level at which it is capable of operating is wasteful in itself, causes building costs to rise, and thus nullifies the benefit of improved productivity which has already been achieved.

As regards building materials, the effects are similar. The impact of a sudden decline in the rate at which new buildings are started varies considerably between different products in timing, but not in degree. In some industries, particularly those whose products are used in the early stages of construction, demand collapses almost overnight; for other products, the decline takes place at a later date; but throughout the whole range of industries production planning is dislocated. It should be pointed out that, because the volume of building which is under construction at any one time acts as a shock absorber, cushioning the constructional side of the building industry against the effects of short term changes in building policy, such changes react more sharply upon the order books and production programmes of the materials producers. Unpredictable changes in demand undermine the confidence of management when contemplating the need for future expansion of capacity, dampen the enthusiasm of the labour force and encourage trained workers to seek greater security of employment in other industries. Experience has also shown that the subsequent re-expansion of building activity which follows a period of artificial restriction is frequently accompanied by supply difficulties in respect of materials such as bricks required in the first stages of construction. Any organisation which claims to represent the interests of the building materials industries cannot, therefore, lend its support to changes in official investment policy unless it can confidently feel that in all the circumstances such action by the Government is fully justified.

The National Council of Building Material Producers has always attached considerable importance and value to the regular meetings which take place with representatives of the Ministry of Works. These meetings, which officials from other Departments concerned with building frequently attend, provide BMP with the opportunity to draw the conclusion reached by its Forecasting Panel to the notice of the Government and thus ensure that the latter are kept fully informed of the views of the building materials industries concerning the current and future levels of building activity and of demand for building materials. In addition, the Minister of Works has always personally been prepared to meet representatives from BMP when the Council has felt that such a meeting should take place.

BMP will continue to promote this co-

operation in the firm belief that continuing liaison between Government and industry is essential. In this way the fullest use can be made by the Government of the knowledge and experience of those engaged in industry in ensuring that economic planning decisions are taken in the best national interest.

Sound Absorbing Materials

Sound absorbing materials are being used increasingly for the control of the acoustical properties of concert halls and auditoria as well as noise reduction in offices, restaurants and factories.

Measurement of the sound absorption coefficients of suitable materials have been carried out for a number of years at the National Physical Laboratory. They have included most of the proprietary materials used in this country as well as forms of special treatment and mounting.

The results of these investigations are now made available for the benefit of users, manufacturers, architects and others concerned with the application and properties of sound absorbers. They have been brought together in a booklet entitled *Sound Absorbing Materials*, by E. J. Evans and E. N. Bazley, published for DSIR by HMSO price 3s. (by post 3s. 4d.), USA 54 cents.

The main section of the booklet consists of tables of the absorption coefficients of over 300 materials measured at the laboratory. Both the materials and the method of mounting employed are described. The materials are classified broadly according to their physical characteristics, those of the same acoustical type being grouped together. The tables are accompanied by a discussion of the results.

Recent developments in the design of sound absorbent materials are described as well as the various types and the physical process involved.

Fire Protection in Factory Buildings

The Building Research Station gives guidance in the new report: *Factory Building Studies No. 9, 'Fire Protection in Factory Buildings'*, published for DSIR by HMSO price 3s. 6d. (by post 3s. 10d.), USA 63 cents.

Fire in industrial premises is a serious hazard and its prevention should have a high priority with factory management. The report provides for factory managements and building designers an introduction and a guide to the various legal requirements.

The report also indicates what precautions may be taken beyond those required by law to reduce the hazard of fire breaking out and spreading within a factory building. Precautions that should be adopted for the safety of personnel, in case of fire, are also considered.

Technical appendices deal with common causes of fires in factories, standard fire resistance tests and the behaviour of materials and elements of structure under fire conditions.

ANTHONY WILLIAMS [4]



Correspondence

The Editor, RIBA JOURNAL

Dispatching the Journal

Dear Sir, - This letter is a plea for better packing in the dispatch of the JOURNAL.

Owing to it being inadequately packed it always arrives here in a somewhat dilapidated state. Is it too much to ask the RIBA to spend just a trifle more time and money (most other bodies who send publications here do) in order to ensure that the magazine arrives in an untroubled state?

Simply placing it in a paper envelope is not enough, it requires also a lining of cardboard.

As the JOURNAL is nowadays very well worth reading, it seems a pity not to do the thing properly.

Yours faithfully,
CHARLES I. HOBBS [4]

Head of School,
School of Architecture, Town Planning and
Building, Kumasi College of Technology,
Ashanti, Ghana

Unfortunately we cannot afford the very high extra cost of stiffening the envelopes.

Copies of the JOURNAL posted abroad are now being sent rolled up in wrappers, as before, and it is hoped that they are arriving in better condition. - Ed.

The Past History of CIAM

Dear Sir, - Several misinterpretations and attacks on the leadership of CIAM appeared in various publications and cause us to give a short account of the past activities of CIAM.

CIAM was an *avant-garde* movement. These movements have normally only a few years of existence before they become history.

When CIAM was founded at the Chateau La Sarraz, Switzerland, the international situation for the representatives of the new movement in architecture and planning was one of complete isolation. We came together because the pressing contemporary problems of architecture and planning had received little attention by universities, institutes of technology and administrative bodies. We felt therefore called upon to make our own independent contributions to the analysis and creative solution of these urgent problems. The *Manifesto of La Sarraz*, 1928, set forth for the first time the new principles as worked out by this small group from various European countries.

To achieve our aim on an international basis, we established a working method which enabled us to evaluate the situation in different countries on a comparative basis and to proceed from analysis to actual resolution. Our intentions were realised on the basis of voluntary work by the individual members of CIAM. Never in its whole history did CIAM accept any official support.

The results of CIAM and the congresses have been published in a series of such books as: *Housing for the Lower Income Classes* (2nd congress, 1929) - *Logis Rationnel* (3rd congress, 1930) - *Can Our Cities Survive* (4th congress, 1933) - *Logis*

et Loisirs (5th congress, 1937) - *CIAM, a Decade of Contemporary Architecture* (6th congress, 1947) - *The Core of the City* (8th congress, 1949). These publications established the great influence of CIAM in every country concerned with the development of contemporary architecture and planning.

The time between 1928 and 1956 saw the gradual breakthrough and general acceptance of contemporary architecture in most countries of the globe. Research, as it had been introduced first by CIAM became adopted officially everywhere. Universities began to look for teachers who were informed by CIAM principles.

In 1953, the founders of CIAM felt that the time had come to hand over the organisation to a younger generation. One of the reasons was that their ever increasing activities and responsibilities did not allow them to carry on their CIAM obligations with their customary intensity. They therefore clearly expressed their wish to retire at the congress at Aix-en-Provence, 1953. To facilitate the change-over, the board decided to give the organisation of the 10th congress into the hands of younger members of CIAM. H. J. Bakema, Holland, was chosen as co-ordinator. He built up a new group, called TEAM X, which prepared the 10th congress (Dubrovnik, 1956) with the assistance of the previous board members and the secretary.

At this point, two possibilities presented themselves: either to reorganise CIAM and to open 'a new page of CIAM', as Le Corbusier proposed it, under the name of 'CIAM II', or to eliminate the name of CIAM completely, as proposed by the secretary, S. Giedion. Neither of these proposals was accepted at Dubrovnik. The congress carried on with the name CIAM.

TEAM X especially insisted on retaining the old name and this attitude was strongly renewed by the adherents of TEAM X at La Sarraz 1957. There the 'reorganisation committee', consisting of TEAM X and other CIAM members, including the secretary, had to take up again the question as to whether the name of CIAM should be continued. It was again TEAM X, who insisted to carry on the activities under the name of CIAM.

It was in September 1959 that the first international meeting was conducted under the responsibilities of 'The reorganisation committee'.

A statement issued at Otterlo to the press by a minority group of members of TEAM X, reversed the former position and declared: 'It was concluded that the name of CIAM will be used no more in relation to the future activities of the participants'. Complaints received from participants indicate that the press release cannot be considered as a conclusive consensus of opinion, as it has never been discussed.

At Otterlo, the majority thought otherwise. The most prominent voice in this direction came from Kenzo Tange, Japan, who stressed the fact that architectural thinking may vary a great deal, but 'that we need mutual stimulation, help and encouragement'.

In a leading article in the *Japan Architect* (October 1960), Kenzo Tange stated: 'The day after I and many of my friends left the meeting, TEAM X announced CIAM's dissolution. I was later informed in Boston that the name CIAM was no longer to be used', and asks particularly that CIAM would do best 'to remain organised under the same name as before. I believe that such a movement will develop. I believe too that it will not be centred around Europe, but around other areas'. To us, it seems important that this positive impulse comes from Japan, a country which recently came to the forefront of contemporary architecture.

CIAM has fulfilled its initial task as far as Europe is concerned. To create a positive workable platform, which will continue to attract those who are entrusted with the task and responsibility of giving shape and substance to the vast areas coming only now into the orbit of the contemporary evolution, would be a true continuation of the mission of CIAM.

J. L. SERT
W. GROPIUS
LE CORBUSIER
S. GIEDION

Architectural Education

Dear Sir, - Your correspondence columns are usually interesting and the December issue was particularly so. The letter by Niall Montgomery was a tonic for the 'real architect' and it is to be hoped that he will see fit to tell us more as the occasions arise. Could it be that the profession has a successor to H. B. Creswell?

Having been in the profession for 30 years and having obtained the views of over 300 experienced architects, I found it just a tiny bit disturbing to see precedence given to the 'pearls of wisdom' from H. Chambers [Student] and C. Musson [Probationer] - particularly as there was no space for the members' comments I sent to you. I am now quite prepared to believe that the Board of Architectural Education pay more attention to BASA than they do to members, but I do think they ought to notice that most of your correspondents, who are experienced in practising architecture and teaching it, have consistently been against the Board's policies. The organisation known as BASA should note that those letters can be interpreted to mean many things (some are not complimentary!) but from the tone of the letter now referred to, it would seem to be more appropriate if it became known as the 'Teach Granny Club'. Particular points which merit replies are:

- (a) A 'representative cross-section of the profession' is more likely to know the answers than an inexperienced group of students.
- (b) Their reference to 'the chaotic state of our schools' is altogether too sweeping.
- (c) It was not suggested by me that 'good sound assistants' or the 'status of the profession' are more important than 'good architects'. But I do believe that some school training trends and exemptions have produced bad assistants and lowered our status.
- (d) As pointed out elsewhere, two 'A' levels do not necessarily mean 'higher intelligence' or 'greater maturity' - famous architects of the past were not always

academically brilliant, and it is quite possible for the best architects of the future to do without 'A' levels.

(e) It is an insult to say that a Selection Board for Probationers is 'too open to abuse', and it is certainly less open to abuse than school exemptions and the visiting examiners system.

(f) They seem to favour the 'tutorial system' but airily dismiss the pupilage system and are apparently unable to see that it might well give a single student the benefit of half a dozen experienced 'tutors'! They might find that the 'constant interaction of ideas between students' is much less valuable than constant use of ideas in a busy office.

In conclusion, it was intriguing to find that my investigation was so completely misrepresented in your editorial comments headed 'RIBA Topics'. From several sources doubts have been expressed whether the two 'A' level condition can be brought forward to 'from now onwards'. When printing this letter, would you make it clear to members whether the notorious document conveying that information to the schools was covered by a Council resolution or not, and if it was, what were the exact terms of the resolution?

Yours faithfully,

EWART B. REDFERN [A]

The decision to bring forward the new arrangements was approved by the Council at their meeting on 13 December. — Ed.

Transport — A Second Thought

Dear Sir, — In the December issue of the JOURNAL Mr Colin Buchanan expresses the belief that in ten years from now there will be 16 million vehicles on Britain's roads. This exposition of a road system capable of dealing with a growing flood of motor-cars is based on the belief that we are facing an irresistible development. At the core of that belief lies the claim that every man is free to move about by whatever means at his disposal. But how free really is Mr Everyman?

Whether he likes it or not, he must get up every morning at a given time; he washes, shaves, dresses and gulps down his fruit juice with an eye on the watch. He rushes out to catch the 8.15. . . . I beg your pardon, he gets out his car and leaves for town. As a good citizen he travels at no more than the maximum speed permitted by law. About half-way towards his destination that speed is likely to decrease until eventually traffic signs, lights, buses, vans, lorries, cars, motor-rollers, cycles and pedestrians reduce it to a snail's pace. Mr Everyman must watch out all the time, he must breathe the fumes and bear the noise. When at last he gets to his destination he cannot leave his car just anywhere, he must park where the law permits it.

For most of the day he must attend to his work in office, shop, store and factory to earn the money which pays for his shopping, rents, rates, instalments and the running of a car. His journey home after a tiring day might be even more trying than his journey to work. No wonder, he looks forward to Sunday and his summer vacation. A Sunday that may turn out to be a petrol-smelling crawl to the coast and a summer vacation on roads packed tight with cars and at resorts with similar nightmare conditions.



Drawing by R. ROSNER

Where indeed is the freedom Mr Everyman is so anxious to defend to his dying breath?

This line of thought, somewhat defeatist perhaps, is not very popular these days. A little while back, Mr Derek Senior, when writing in the Town Planning Journal, dealt rather severely with the sceptics who would not believe in the 'irresistible locomotive revolution'. They were brushed aside as belonging to the lunatic fringe of besotted Supertopians who dismiss the vehicular tide with the sublime myopia of Canute's courtiers. We must build, they say, not for cars but for people, oblivious of the fact that people find cars less dispensable than houses.

In spite of this partisan fervour, some doubts are likely to remain. If astronomic sums must be invested in road building to cope with the current traffic, how much precisely will have to be put aside for roads, parking places, and garages until 1970 when according to Mr Buchanan the number of vehicles will have doubled, thus exceeding the number of dwellings in the country? The setting-up of an expert committee of traffic planners, civil engineers and economists to investigate this question seems long overdue. One cannot help feeling that their estimates of future expenditure, if based on Mr Buchanan's figures, would not just be staggering but quite unrealistic because the required sums could not possibly be made available.

Money is urgently needed for many other things. Out-of-date hospitals must be replaced and hundreds of health centres built if the national health service is to become fully effective; the ever-increasing number of mothers going out to work necessitates the building of many more nurseries and nursery schools; more classrooms will be required when the school-leaving age is eventually raised to 16. Many university extensions, technical colleges and colleges of further education are going to be built during the next years. There is the reconstruction of decayed urban areas and the raising of present housing standards. Methods of heating and sound insulation ought to be more efficient. The design and

lay-out of dwellings and estates should be improved so that everyone gets a reasonable chance of developing his talents and initiative.

An antiquated railway system must be completely overhauled and electrified, harbours improved, the power-network enlarged and supersonic aircraft developed in order to keep Britain competitive. To turn abroad, defence is costing £1,600 million a year and the under-developed countries, representing more than one very hungry third of the human race, need our aid even more urgently.

This is not a treatise against the motor vehicles as such. The writer supports the further improvement of public and commercial road transport but believes that there is going to be a great deal of re-thinking on the private motor-car. The eventual verdict will be negative and subsequent action restrictive.

R. ROSNER [A]

'The Reynold's Club', The Association of Ex-Students of the Royal Academy Schools

Dear Sir, — This Club was formed some years ago and meets periodically at the Royal Academy, Burlington House, Piccadilly.

The Honorary Secretary is Miss J. W. Thompson of 28 Smith Street, London, SW3, who would be pleased to hear from any architect ex-students of the Royal Academy Schools.

The annual subscription is nominal and the meetings consist of four or five per year, and include a Dinner at Burlington House, film shows and special tickets for RA, exhibitions, etc.

At the AGM held recently the chairman commented upon the fact that few of the architect ex-students seemed to be aware of the existence of this Club, so will those students who are interested please contact the Hon. Secretary in the not too distant future.

Yours faithfully,
SIDNEY LOWETH [F]

Book Reviews

Boston: A Topographical History.

By Walter Muir Whitehill. Cambridge, Mass.: The Belknap Press of Harvard University Press (distributed in Great Britain by Oxford University Press). 1959. £2.

What a civilised book this is. The Director of the Boston Athenaeum (which is not a Club but a Library) first put this material together to form the Lowell Lectures, another Boston phenomenon, but there is nothing stuffy or strung-together about it. He says modestly at the beginning that his eight chapters only skim the surface of a large subject, yet Boston, like all American cities, is changing so rapidly that it is desirable that as many of her responsible residents as possible should know something of her evolution during the past three hundred and thirty years.

Here, then, is the face of Boston and what her citizens did to it, both more or less responsibly. The theme of knowledge and responsibility is splendidly summed up at the end of the book in a paragraph that should be waved like a banner:

The topographical history of Boston . . . has been a record of constant change; so has the history of its architecture. I have no desire to see a slavish antiquarianism in new construction, and no inclination to see any part of Boston as another Williamsburg. . . . Yet I can hope that new buildings in the center of Boston will, in their placing, color and contours, respect and enhance their older neighbors rather than swearing at or overpowering them. . . . American cities today are getting to look all alike. . . . Boston still retains a considerable degree of its own flavor and color. It would be a pity to let this be submerged in an 'organisation man's' impermanent and glittering mediocrity, when there is still time to build soundly upon existing strengths.

Oh 'responsible residents' of London are you there?

London, in fact, comes often to the mind of the reader, for instance with the remark that 'in one sense Boston is a series of contiguous villages'. And there are agreeable descriptions of Faneuil Hall market being put to its intended uses, without detriment or disrespect to the Cradle of Liberty. Once rocked by Revolutionary and Abolitionist orators, upstairs: ' . . . to the delight of those who enjoy honest beef and historical continuity and to the puzzled confusion of certain tourists whose historical experience has been confined to glittering restorations elsewhere, and whose shopping has been limited to the . . . supermarket'.

The enlarging of that hallowed and practical building was one of the many works of Boston's first architect — almost a Thomas Jefferson of a man — Charles Bulfinch. It is a blot upon Boston that there is no good modern monograph on him. As an architect he gave the city a new urban elegance, and as one of the most devoted officials of its government 'he improved its finances, executed the laws with firmness, and was distinguished for gentleness and urbanity of manners, in-

tegrity and purity of character' (Mayor Quincy). In a not-so-amateurish style formed by his visit to France and England in the 1780s he built churches, markets, a theatre, a court house, town mansions for merchants, a crescent of houses, the new State House, banks, hospitals, and schools. When asked if he would be training any of his children into his own profession, Bulfinch replied 'that he did not think there would be much left for them to do'.

Plenty remained to do. The small peninsula with its three hills could not hold a growing city. The hills were gradually cut down to fill the bay, the top of Beacon Hill being trundled down to the Mill Pond in tip carts — something like St Katharine's Docks going to Pimlico. The histories of the Mill Dam and of the filling in of the Back Bay are told with relish, including the tale of that Beacon Hill gentleman of the present century who would not allow his daughter to live on 'made land'. Much of this was involved with the coming of the railways: Boston had them by 1835. Every city so emmeshed in railways since their beginnings ought to write its topographical history before the Railway Age is quite dead; one can guess that the assembling of such complicated material was a long job even though this is only a summary. Throughout the book we have the author's down-to-earth comments on what the high-flying bridges and overhead highways which have been created for the motor-car are doing to the looks and life of an old city.

While the Back Bay project was brewing, there came a Scotsman, Robert Fleming Gourlay, now quite forgotten but for a pamphlet and his abortive 'General Plan for Enlarging and Improving the City of Boston' inscribed for the Reading Room of the Athenaeum in 1844. This far-seeing man proposed a circus at an intersection of railway lines with a sunken 'transfer depot' in the centre, from which 'suburban' railways were to sweep around the city and into it, diving into underground tunnels to connect the various railway termini. 'Already,' Gourlay wrote, 'Washington Street [read Oxford Street] is crowded to excess; and, every day, we witness inconvenience from the noise and collision of carriages. . . .' Mr Whitehill thinks Boston's present transport troubles must give Gourlay's ghost some wry satisfaction.

There are times in this book when one feels the author is not being quite visual-minded enough for total topographical effect: although once himself an architectural historian, here he seems quite deliberately to avoid strictly architectural history, perhaps only because he is a busy man. Yet, to show local building types in their context beyond Boston, however briefly, would have further enriched the book's local flavour.

For example, nothing is made of the gradual evolution of the Boston meeting-house plan, from uncompromising non-conformist square toward the west-towered oblong of the once-despised Anglicans. Did this happen for reasons of audibility, or the shape of available building lots or, more likely, was it the increasing tolerance of

the prosperous, and part of a process going on elsewhere? Answers about the shapes of buildings often come from social historians, but architectural historians must pose the questions.

Some emphasis might have been given to the singularity of Harrison's colonnaded tower (King's Chapel, design 1749 — unusual anywhere), of Bulfinch's octagonal church (New South, 1814 — were there others in the new republic?), and of Lemoullier's mansard roof (Deacon house, 1848 — first used in London by Dusillier and in New York by Lienau only in the following year?). These have a certain interest as forms, even beyond the Bostonian's horizon — as very minor landmarks, one might say, in the topography of Western architecture.

Just the same, one would rather not see an unmitigated architectural historian turned loose on Boston. Not unless he could describe the intangibles, its character, its flavour, and its failings, with the fond and mellowed familiarity of Mr Whitehill. Another writer who was good at this was the late Walter H. Kilham, an architect whose *Boston After Bulfinch* (Harvard, 1946) was all too short and less widely appreciated than it deserved to be.

Boston is a place, as well as a state of mind. This reviewer delights in having savoured it for a while, long enough to be convinced that the complete Bostonian, when not too proper, tells about it the best and I savours it the most of anybody.

PRISCILLA METCALF

Reginald Fairlie: 1883-1952; A Scottish Architect.

By Patrick Nuttgens. 8½ ins. 68 pp. + 60 plates. Edinburgh: Oliver and Boyd. £1 1s.

Any architect would be happy if his life and work were recorded as it is done in this memoir of Reginald Fairlie. It is both adequate and charming. The volume, too, is the right size, well written and illustrated by photographs, often with clearly drawn plans adjoining them. The National Library of Scotland is his biggest work and notable for the brilliant handling of an almost windowless stone front. The building looks learned, a trifle academic, yet interesting for its touch of modernity, especially inside. But Fairlie will be known as the last flower of the Gothic Revival, so clearly shown here, by the many examples of his church work. At St Andrews, for instance, he built the exquisite little Catholic church of St James on the edge of the cliff; and carried through a reconstruction of the college church of St Salvator. The latter is displayed to us by two very fine perspective drawings, made by Sir Basil Spence in 1931 — in the richest late Gothic style, too. Then there is a clear link with Sir Edwin Lutyens discernible in the gates and lodges at Floors Castle for the Duke of Roxburghe. Yet the most valuable contribution he made to Scottish architecture is the building of Fort Augustus Abbey during a number of years of his life. This began with a choir and lady chapel added to some work by P. P. Pugin. That portion was designed in massive Norman in 1914, but in strong contrast to the much later nave with its tall slender columns, closely linked by round arches and capitals almost contemporary in their invention.

A. S. G. BUTLER [F]

The Muslim Architecture of Egypt. Vol. II: Ayyūbids and Early Bahrite Mamlūks A.D. 1171-1326.

By K. A. C. Creswell. 17½ in. 324 pp. + 126 plates, etc. Oxford: Clarendon Press. 1959. £25.

It is half a century since Professor Creswell began to study Muslim architecture; and the volume under discussion here is the fourth in his monumental history of the subject, a project which began with *Early Muslim Architecture* (2 vols., 1932, 1940), with its Pelican pendant *A Short Account of Muslim Architecture* (1958), and continued with the first part of *The Muslim Architecture of Egypt* (1952), covering the years 939 to 1171. The harvest of his lifetime's devotion is a definitive contribution to the study of his subject, a single-handed triumph for which it would be foolhardy to search for parallels.

This book takes the story from 1171 to 1326; and does so by means of a personal examination of every known monument of the period. Each is given a section by section analysis, with plans and elevations; Prof. Creswell's vast knowledge of the field, supported by an absolutely meticulous control over this knowledge, enables him constantly to relate detail to similar features he has noted elsewhere; all references in the literature to every building are examined, and often quoted; there are numerous bibliographies; and finally the survey is completed by magnificent collotype plates.

The first three chapters are devoted to an illuminating survey of Saladin's Citadel at Cairo. Then, after examining a number of later Ayyūbid mausoleums and monuments, he proceeds to an important study of the cruciform plan of the Cairene Madrasa. This study, which involves him – it is an example of his method – in a detailed chronological survey of thirteen surviving pre-1270 Madrasas in Syria, provides him with that most gratifying kind of evidence: evidence which presents practical proof of conclusions reached theoretically, in this instance more than 35 years previously.

The second part of the book, which deals with the early Bahrite Mamlūks, includes an examination of the five extant monuments of the great Sultan Baybars I, ruler of an Empire which comprised all of today's United Arab Republic and Arabia as well, formidable enemy of the Crusaders, and founder of defensive alliances against the Mongols with kingdoms from Aragon to the Volga; and a study of that great complex of buildings formed by the Māristān, Mausoleum and Madrasa of Sultan Qalā'ūn. Passers by, Prof. Creswell tells us, were firmly pressed into helping with the heavy construction work of the Māristān, and the result was a sumptuously endowed free hospital, complete with specialist wards, dispensaries, lecture theatre, and even musicians to speed the recovery of convalescents. Later chapters deal with other early 14th century monuments, including the Great Aqueduct, with 317 arches and nearly two miles in length, which was not finally abandoned as a source of water for Cairo until 1872.

Prof. Creswell has also found room to continue his study of individual elements, such as mihrābs, domes and pendentives. In tracing the evolution of the minaret, he disposes of the widely held view that it takes its form ultimately from the Pharos

at Alexandria. This he does by arranging all existing examples in strict chronological order and examining each in relation to what is known of the Pharos. He finds that by the time the first minaret which followed the square-octagonal-circular pattern of the Pharos was built, hardly more than one storey of the Pharos had been extant for 150 years.

The period treated in this exemplary and sumptuous book was notable for the impact of outside influence on Egyptian architecture. The calamitous sackings and massacres by the Mongols in the early 13th century released a flood of refugees into Egypt, including the craftsmen who brought with them those North Mesopotamian and Syrian elements observable in Egyptian architecture of the period; whilst the Spanish Reconquista scattered Muslim craftsmen eastwards along the Mediterranean, and brought Andalusian influences as far as Egypt and even Damascus.

The reader would have been helped had the map of vol. I been reproduced here, and he may find that the large page size has resulted in a type column width (nearly 9 in.) too wide for comfort; but for the rest one must salute all concerned in the production of this magnificent work, from the proof readers of the Clarendon Press to the Gulbenkian Foundation, who made a grant towards its publication, and acclaim the courage, the industry and the astounding scholarship of its author.

D. E. D.

Fashions in Church Furnishings, 1840-1940.

By Peter F. Anson. 10½ ins. 384 pp., illus. The Faith Press. 1960. £2 10s.

Liturgy and Architecture.

By Peter Hammond. 8½ ins. 204 pp., illus. Barrie and Rockliff. 1960. £1 17s. 6d.

Anyone who has ever had the slightest interest in the churches of the last century and of this will find Peter Anson's book fascinating and entertaining; it combines a deep knowledge of the subject with the gentle wit which made the author's *Abbot Extraordinary* such memorable reading. All the styles, sub-styles, deviations, quirks and fancies in churches Anglican, Roman and Free are described, illustrated and explained against their ecclesiastic and social background. Everyone's favourite architect is here, sympathetically considered, as well as the first and most enduring loves of the ecclesiastical enthusiast. There is a whole chapter on those splendid, and now deserted or converted, Irvingite churches, and the more conservative will find nostalgic echoes of their teens and twenties, when 'spikiness' could be measured in fractions of degrees by the discerning. Among many delightful oddities, few now know of the fashion (c. 1870) for evergreens used for altar crosses, reredoses and rood screens, which are described in a chapter called 'The Art of Garnishing Churches'; these were principally a device to disguise the facts of High Church life from the more Evangelical bishops.

For the more serious student, unless he be of the fast dwindling ranks of Ecclesiologie à la Campden and living in a timeless wonderland of sacerdotal security, *Fashions in Church Furnishings*

has, in the end, a sad lesson to teach. It is hardly surprising that a taste for Southern Baroque in 1928 (St Augustine's, Queen's Gate; the reredos, and The Holy House at Walsingham, both Anglican) and Modernistic Baroque in 1936 (St Monica's, Bootle, Roman) should have led to a vacuous chaos in the nineteen forties and fifties.

It is against this later background of Peter Anson's survey that Peter Hammond's book should be read.

There are few who can be, none who should be, complacent about the state of present-day church design in Britain, even if they are unaware of Liturgical trends on the Continent, or of the very considerable progress made in the last 40 years in Switzerland and Germany, and more recently in France. In church matters a large body of architects can be surprisingly unaware. In Britain a considerable number of churches and even a new cathedral have been built since 1945; yet, except for a scattered dozen or so, the results have been generally depressing. Some of these appear at times to be modern, and even progressive, as buildings, but liturgically they are either outdated in form and arrangement or deplorably wrong-headed, a mere 'garnishing' of churches in fact. Why this is so Peter Hammond very competently shows in his *Liturgy and Architecture*. The blame cannot be laid solely upon the architects, nor even on the laity, as he explains. It lies in the failure of the Churches to present a programme based on a sound understanding of their own liturgical requirements for today, and to brief their architects adequately.

It would have been impossible, say, for Gottfried Bohm to have designed St Albert's Saarbrücken, without a very considerable knowledge of the real needs of the building which he was designing. Only the Church could supply this liturgical briefing, and not even she could do this without a true understanding of herself and her own problems and needs. It is obvious that the Church in several European countries and parts of the USA does know clearly what she wants, and guides her architects accordingly; here Anglicans, Roman Catholics and Free-Churchmen have only the haziest notion of their responsibility to architects. The results are vile, trivial or inane by turns.

Peter Hammond, who is in Anglican Orders, has both knowledge and understanding of the architect and his work. Writing as a priest, his authority is theological while his standpoint is liturgical in outlining the meaning of the Church and her liturgy when she builds. His plea is for clarity of thought within the Church about her present needs, and that these needs should be made clear to her architects. Only in this way can a sound church architecture be again created, and he shows that this is possible by examples abroad where progress has been made, and in a very few instances here. Peter Hammond has already done much pioneer work by his talks and articles, and by his enthusiastic energy in the New Churches Research Group; his book should be read with the sympathetic attention and respect which it deserves, for it provides a vital step towards creating churches of our time and for our time.

M. D. BEASLEY [4]

The Works of Affonso Eduardo Reidy.
By Klaus Franck. 8½ in. 144 pp. incl. illus.
Alec Tiranti. 1960. £2 16s.

It will be remembered that Reidy was one of the group of young Brazilian architects who worked with Lucio Costa and Le Corbusier on the latter's designs for the Ministry of Education building in Rio de Janeiro in 1937. The influence of this experience is apparent in nearly all his work, especially in the huge serpentine blocks of his housing schemes, and in his outstanding achievements as a town planner, in which many of Le Corbusier's ideas are reflected.

The extent and variety of Reidy's practice, which includes theatres, museums, residential work, office blocks and schools, is well illustrated in this brief bilingual (German and English) survey. In a discursive introduction, Professor Giedion criticises the plan of Brasilia, in which of course Reidy has so far played no part. The inference is that he should be brought in as planning consultant before it is too late.

J. C. P.

Decorative Designs for Contemporary Interiors.

Edited by Konrad Gatz. 11½ in. 240 pp. incl. 506 illus. (52 colour). Peter Owen. 1960. £4 4s.

Apart from a very slight rearrangement of certain parts of the text, this bilingual (German and English) picture book is identical with a volume published by Callwey of Munich in 1956 with the title of *Farbige Räume*. It is handsome, as one would expect, but an overwhelming majority of the many schemes of decoration illustrated are German, and not everybody will be satisfied that such an inevitably prejudiced selection is appropriate to the needs of British readers.

J. C. P.

The Second Treasury of Contemporary Houses.

Selected by the Editors of ARCHITECTURAL RECORD. 11½ in. 232 pp., incl. illus. New York: F. W. Dodge Corporation. 1959. \$7.75.

Forty-four recent American houses from the pages of ARCHITECTURAL RECORD and from the RECORD HOUSES annuals of 1956-58 are described and illustrated with photographs, site and floor plans, some details, and an occasional section. 'Disciplined elegance' is the phrase used by the editors in appraising one of them. It would have done equally well for them all. Russell Lynes of HARPER'S MAGAZINE introduces this collection with some entertaining and constructive comments on 'The American at Home'.

J. C. P.

Saalbau. Handbuch für die Planung von Saalbauten u. Kulturstätten.

By Hans Wolfram Theil. 12 in. 259 pp., 200 photos, 771 drawings, 2 colour plates. Munich: Verlag Callwey. 1959. DM. 54.

One of an extremely valuable series of exhaustive handbooks¹ on various building

¹ Another volume of this series, *Garagen- und Tankstellenbau*, by Rolf Vahlefeld and F. Jacques, has recently been translated into English by Dr E. M. Schenk and others. The title is *Garages and Service Stations*, published by Leonard Hill (Books) Ltd, £3 3s.

types, *Saalbau* is concerned with the planning of the multi-purpose hall, as opposed to the hall devoted to one particular purpose (e.g. theatre, sports, or public meetings). It offers an immensely detailed and elaborately illustrated analysis of every problem that has to be taken into consideration when preparing a scheme for buildings of this kind. In addition a number of recent examples are fully described and illustrated, most of them, as one might reasonably expect, in Germany.

J. C. P.

Farbige Bauten (Colour on Buildings).

By Konrad Gatz and Wilhelm O. Wallenfang. 12 in. 264 pp., incl. 381 illus. (216 in colour). Munich: Verlag Callwey. 1960. DM. 58.

Colour on Buildings deals only with colour used externally and as applied to modern buildings. It is a very well produced book, opening with an introductory article 'Conditions and possibilities of colour effects in exterior architecture', given in German, English and French, followed by illustrations drawn from European examples of which 216 are reproduced from photographs in colour. To conclude there is a 50 page technical section in German.

'All forms reach the eye by way of colour', we are reminded. And 'Colour can enoble any building, or it can weaken, falsify or even destroy it' which we ourselves have discovered over the post-war period, when partly owing to lack of talent and part to the limited colour ranges of new materials, some distressing façades appeared all over the place. Since then, however, we have achieved more skilful and restrained use of colour, although no British examples have been selected for the book under review.

Colour on Buildings both records this particular period while providing excellent material for study.

N. M.

Bristol in the 1890's.

By Reece Winstone. 10 in. approx. 50 pp. of photos. Obtainable from author, 23 Hyland Grove, Henbury Hill, Bristol. 1960. 12s. 6d.

It is always fascinating to thumb over the pages of a scrap-book. Inevitably one cannot put it down until one has reached the last page. This little book is a scrap-book of 184 photographs of Bristol in the 1890's and is the fourth in the series collected by Mr Winstone, the earlier ones being *Bristol To-day, Bristol As It Was 1939-1914*, and *Bristol As It Was 1914-1900*.

The book may be designed for Bristolians and, being purely local, cannot be appreciated to the full by any who do not know Bristol well; but, as a history of town planning it can be said to apply to any city in England; and as a survey of fashions in transport and in dress it can be said almost to rival *Punch*.

Through the pages of these books we see the arrival and departure of the trams, the progressive covering in of the water in the city centre, the coming of the motor-car and the falling into decay and demolition one by one of buildings of historic interest. Many of the buildings illustrated here have disappeared, some of them suddenly in the blitz of Good Friday 1941, but much of the damage has been deliberate and man-

made. Illustration 84 shows the graceful sweep of Queens Road to the Victoria Rooms; we had almost forgotten the fine arcade on the ground floor since it was concealed by the shop canopies before the war, and now where bombs have dropped buildings of completely different character and scale have been inserted so that this fine shopping street is now a jumble of odd bits and pieces.

This is a book that tells its own story; only the shortest of prefaces and introductions is required, and the notes against the photographs are adequate. Perhaps what is most revealing is the comparison of the street decorations for the various royal occasions over the years. How little tastes in pomposity have changed!

T. H. B. BURROUGH [F]

Admiralty House, Whitehall.

By Viscount Cilennin. 8½ in. 66 pp. incl. illus. Country Life, 1960. 12s. 6d.

This is a chatty, readable, book about the history of a great public building. It has excellent photographs - one detects the hand of *Country Life* - and one reads with pleasure that the profits are to be given to the King George's Fund for Sailors. So far, admirable, and an encouragement to buy. Yet, here is a major architectural monument and the publishers produce a book almost totally devoid of documentary evidence. The drawings, accounts, and official payments, tell a fascinating story and could surely have been put into an appendix. One would have liked to have known more about Thomas Ripley's work (there are building accounts extant); about Robert Adam's screen, and the sculptures by Spang; about the Coade stone reliefs; about John Deval's work; about the Westmacott chimney pieces from Wricklemash, almost certainly carved by J. M. Rysbrack. These omissions are a pity, because we are not likely to get another book on the Admiralty, and will have to wait for the History of the Office of Works - sadly a long time off.

The author will be better known to most readers as J. P. L. Thomas, a recent First Lord.

J. H.

Quantities and Estimating for Building Technicians.

By John F. L. D'Esté. Vol. 3: Carpentry, Joinery and Ironmongery. Vol. 4: Plumbing. Each 7½ in. 142 pp. incl. plans. Spon. 1958 and 1960. 15s. each.

Two more volumes in Mr D'Esté's series are now available. They set off, as do his previous volumes on Brickwork and Drainage, and Plastering and Paving, not merely to deal with the theory and practice of measurement, but also to link such considerations with problems of valuation and costing.

The author assumes no previous knowledge on the part of his readers, and he sets out his subjects in clearly organised and practical terms with plenty of examples. Consequently the reader is taken step by step through the various stages in a manner which will be of service both to the practising technician and to those who are studying for professional examinations.

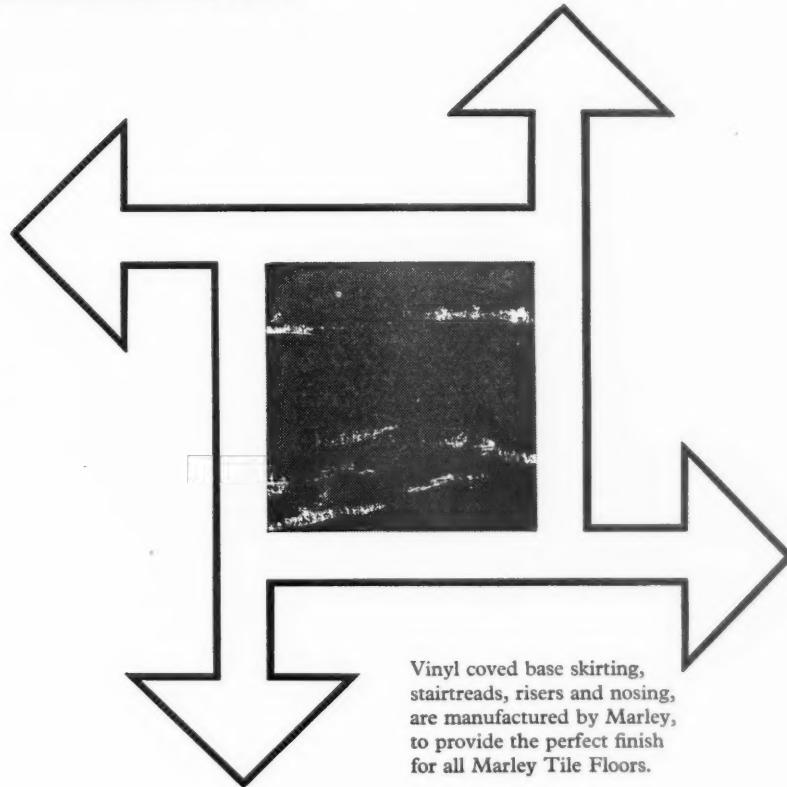
D. E. D.



By Appointment to
HER MAJESTY THE QUEEN
The Marley Tile Co. Ltd.
Suppliers of Floor Tiles



MARLEY floor tiles



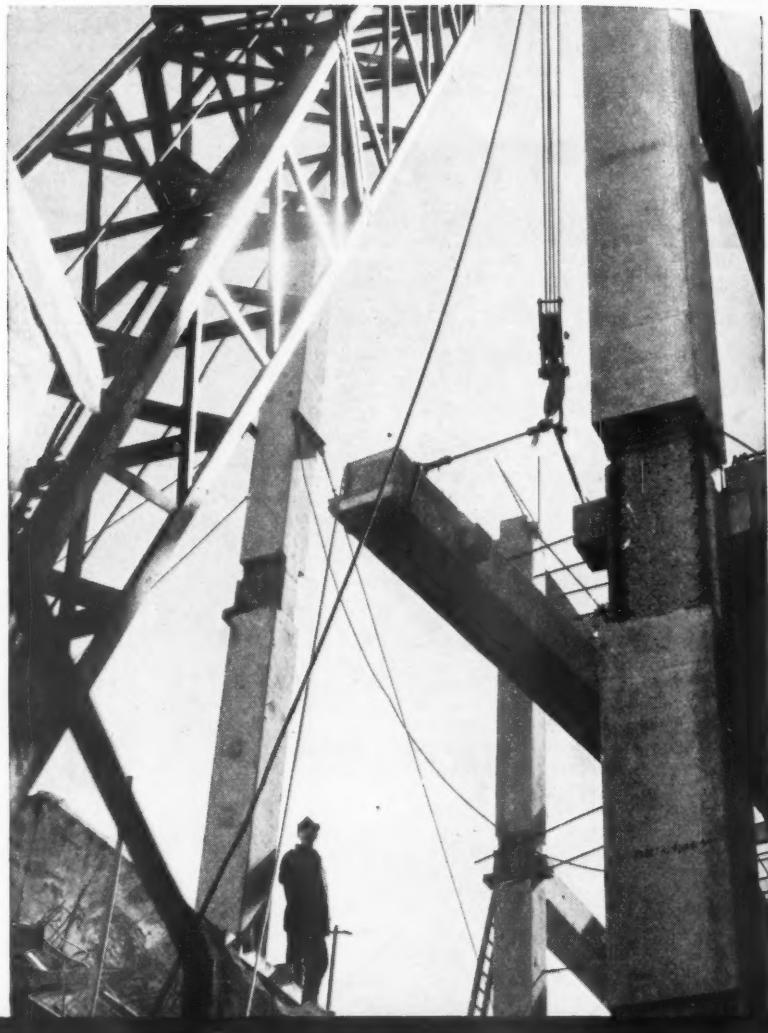
Vinyl coved base skirting,
stairtreads, risers and nosing,
are manufactured by Marley,
to provide the perfect finish
for all Marley Tile Floors.



SEVENOAKS • KENT • Sevenoaks 55255
London Showrooms • 251 Tottenham Court Road • W.1

...for many flooring applications

**VACANT
SITE
TO FULL
PRODUCTION
IN
17 MONTHS**



The £700,000 Hoddesdon project is another example of how Cubitts' go-ahead construction approach is helping industry.

Merck, Sharp and Dohme, pharmaceutical manufacturers needed their new laboratory building as quickly as possible. So they and their architects, Edward D. Mills & Partners, F/ARIBA, nominated Cubitts for the project.

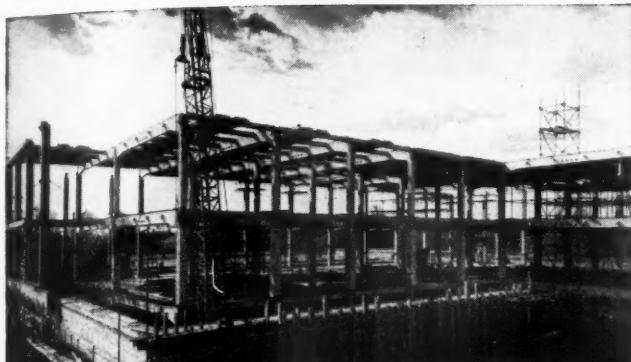
It was decided to use prestressed and precast reinforced concrete construction. This method advanced progress by many weeks, cutting out the time needed for on-site concrete work, and offsetting shortage of suitable labour around Hoddesdon. Time and cost were saved, too, by planning to optimum usage of plant for the size of concrete units employed.

To ease their client's output problem even more quickly, Cubitts arranged to complete first the middle portion of the new building, which contained the main mechanical services. By installing the service risers in one vertical duct, floor levels were

served and put into use as general construction work finished on each.

Only 11 months after delivery of the first precast columns, the new building was producing for Cubitts' client, and six months later the take-over was complete. Through early collaboration with client and architect, Cubitts were able to complete the plant much sooner than with orthodox construction methods.

Another reason was Cubitts' co-ordinated construction service which brought in their associates Engineering Service Installations Ltd. for mechanical services and plant erection, Concrete Development Co. Ltd. for the concrete frame, and their own Joinery and Painting Departments for specialist work.



Another Cubitts' client is on the way up!
Precast main beams and 65 ft. long reinforced concrete columns were made by Concrete Development Co. A member of Cubitts organisation, they collaborated closely with the Consulting Engineers J. C. Hughes & Partners.



The new Merck, Sharp and Dohme laboratory building at Hoddesdon incorporates the latest air conditioning, sterilising and refrigeration plant, 67 feet high. The building covers a total floor area of about 75,000 square feet on a $\frac{1}{2}$ acre site that provides for future expansion.



Mr. T. W. Rayner, Managing Director of Merck, Sharp and Dohme, says:
"I can fully endorse the value of collaboration from the planning stage between client, architect and contractor. Knowing the difficulties involved in planning and constructing our Hoddesdon plant, I am fully satisfied with the results: not only did we go into full production within 17 months, but construction costs were kept strictly within the original estimate."

Mr. R. D. McLeod, Director of Cubitts, says: "We like to have the opportunity of participating in the planning of our clients' projects. Fast construction at economic cost follows from the application of specialist services and practical experience available within our organisation. Applied at Hoddesdon, this was a major factor in the successful completion of the project."



**HOLLAND & HANNEN AND CUBITTS LTD.,
ONE QUEEN ANNE'S GATE, LONDON, S.W.1.**

CUBITTS

LONDON · EDINBURGH · GLASGOW · NEWCASTLE · LIVERPOOL
BRISTOL · TORONTO · MONTREAL · VANCOUVER · WELLINGTON
N.Z. · PORT OF SPAIN · BEIRUT.

木板

In every language....

...veneers mean John Wrights.

Our high grade veneers are in use, not only in Japan but throughout the world.

Ask our sample veneer unit to call at your office with full leaf samples for your inspection.

Manufacturers of veneers of all kinds since 1866.

JOHN WRIGHT & SONS (VENEERS) LTD

AVON WHARF, LONGFELLOW ROAD
MILE END ROAD
LONDON E3

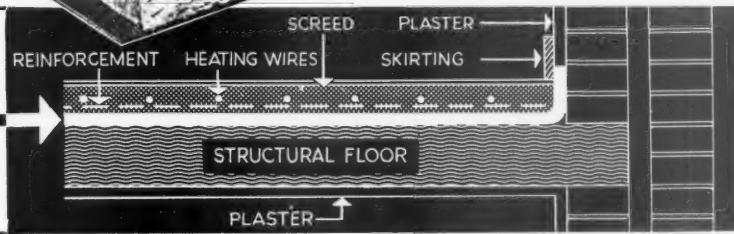
Tel: ADVance 4444 (10 lines)
Grams Mottled Bochurh London

IT'S QUIETER with STILPHON 20 FLOOR INSULATION



STILPHON 20

Mineral wool mat at 7 lbs.
cu. ft. density as a Thermal/
Acoustic leaf in concrete
screed Floating Floor with
underfloor heating



For the full details of these recommendations see "Notes on the Construction and Finish of Floors that are Electrically Warmed," produced by the Electrical Development Association, from which the following is an extract:—

"Suitable materials for use as perimeter and oversite insulation are:

Dense mineral wool mats or boards.
Resin-bonded fibre glass, weighing
not less than 6 lbs. per cu. ft.
Cork slabs.
Expanded rubber.
Expanded polystyrene.

The Electrical Development Association's latest recommendations for underfloor heating construction define the qualities required by insulating materials for this class of work. Stilphon 20 complies with their requirements in high degree, it has exceptional resilience and has been specially designed to maintain an effective thickness under the loading of a concrete screed. So used it can therefore function efficiently both as a thermal *and* sound insulant. May we send you full details?

STILLITE
REGD. MARK

To STILLITE PRODUCTS LTD., 15 Whitehall, London, S.W.1.
Please send details of Stilphon 20.

NAME.....

ADDRESS.....

Just attach to letterhead

R.I.B.A.

STILLITE PRODUCTS LTD., 15 WHITEHALL, LONDON, S.W.1. Tel: WHITEHALL 0922/7

231 St. Vincent St., Glasgow, C.2. Central 4292

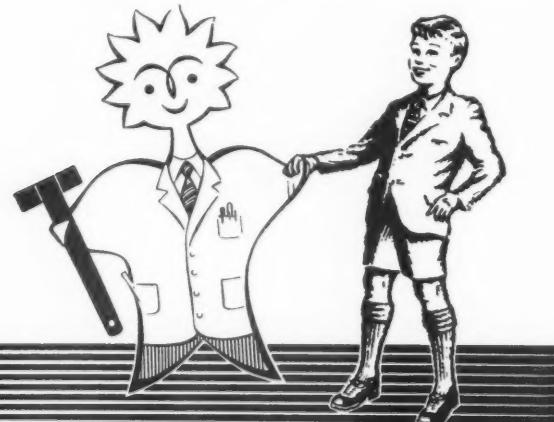
it's his future...

...backed by **MR. THERM** who Burns to Serve architects and builders

... in all ways. He will grow up with Central Heating—yes gas central heating, for gas central heating has become increasingly popular in the home ... for only gas central heating offers no fuel delivery upsets, no wasted fuel storage space, complete automatic control—and—'buy out of income' facilities at only 5% interest up to 5 years with no deposit.

Through the twelve Area Gas Boards, the Gas Industry offers an unrivalled free advisory service on 'Perfect Central Heating' to Architects and Builders.

Write or 'phone your problem to your Gas Board NOW



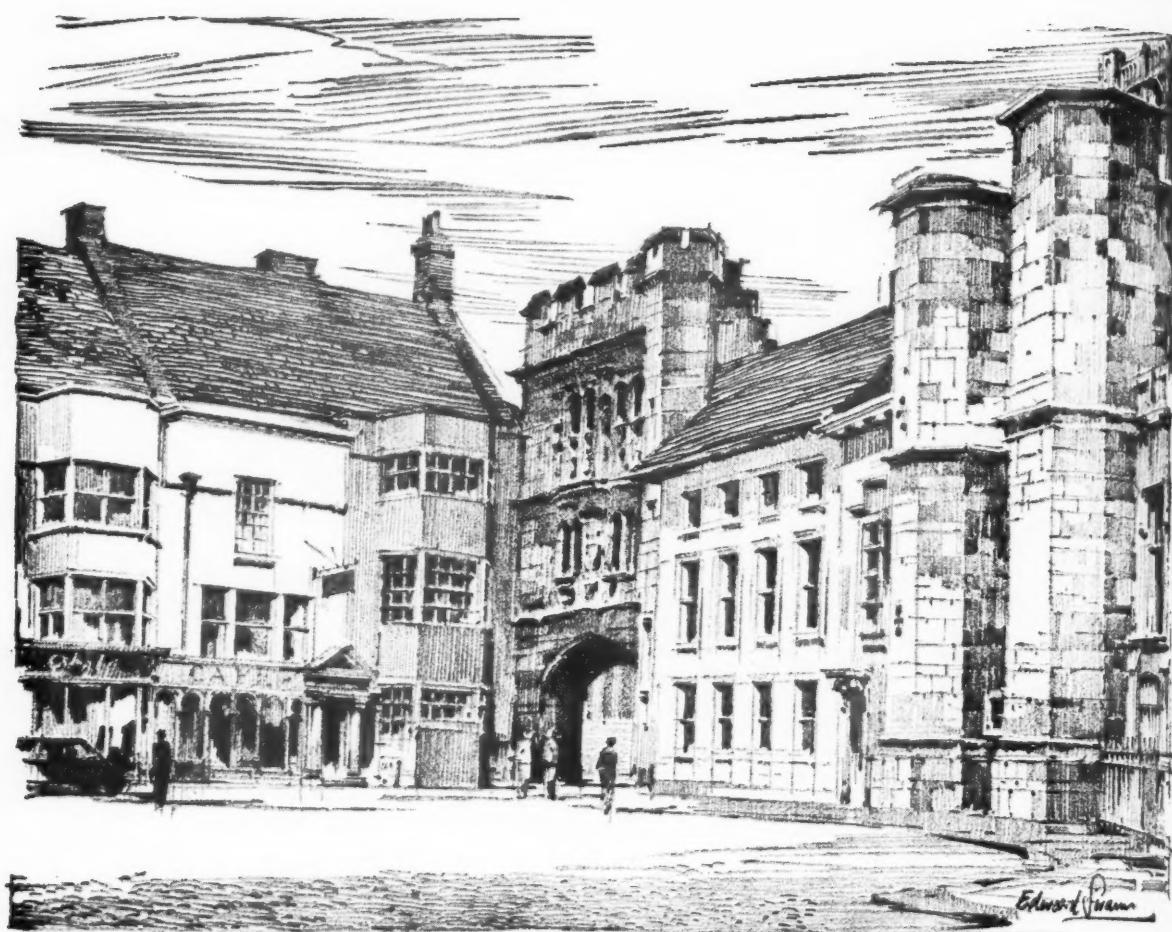
Visit the
"COMFORT IN THE HOME EXHIBITION"
Royal Horticultural Hall, London, S.W.1
7-18 FEBRUARY

ISSUED BY THE GAS COUNCIL

C118

an builders always...





WALPAMUR QUALITY PAINTS do a wonderful job . . .

Beautiful colours . . . perfection of finish . . . for all types of decoration . . . Walpamur Quality Paints do a wonderful job. Constant testing, both laboratory and practical, maintains the superlative quality which has won international acclaim for these famous paints.



THE WALPAMUR CO LTD · DARWEN & LONDON
Paints, Enamels and Varnishes for every possible need

The full range of laboratory- and practical-tested Walpamur Quality Paints—the standard by which others are judged—comprises Paints, Enamels and Varnishes for every possible need and includes—

WALPAMUR WATER PAINT. In a range of 42 intermixable colours. Economical flat finish for walls and ceilings. Exterior Quality available in selected shades.

DURADIO 5-YEAR ENAMEL PAINT. In a range of 46 intermixable colours. High gloss, hard-wearing inside and out. Easily applied. Especially formulated to last five years—and more!

DARWEN SATIN FINISH. In a range of 27 intermixable colours. Satin sheen for any interior surface. Steamproof and washable. Darwen Flat Finish also available.

WALPAMUR EMULSION PAINT. In a range of 29 intermixable colours. Easy-to-apply matt finish for inside and outside use. Quick-drying, odourless and washable.

For further details of these and other Walpamur products write to The Walpamur Company Ltd., Darwen, Lancs.



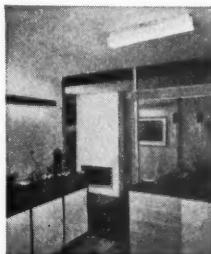
BY APPOINTMENT
TO HER MAJESTY THE QUEEN
MANUFACTURERS OF PAINT
THE WALPAMUR CO LTD
DARWEN, LANCs

W1030

A NEW CONCEPT IN DECORATIVE FLUORESCENT LIGHTING

atlas A-PLAN LIGHTING

These new Atlas lighting fittings provide a means of easily integrating fluorescent and tungsten lighting in the creation of modern, sophisticated interior design. Dramatically simple in styling, each fitting is a complete lighting unit which can be used to add emphasis, achieve atmosphere or set attractive new lighting effects in the home, exhibition or display. By combining various Atlas A-Plan fittings with such contemporary tungsten fittings as the Atlas 'Chelsea' and 'Finlandia' ranges, infinite scope is provided for the creation of superb lighting schemes, incorporating both general effect and focal-point illumination.



ATLAS A-PLAN fittings are available in five styles, a variety of colours, and sizes of 2 ft., 4 ft. or 5 ft.



Full details from: ATLAS LIGHTING LIMITED,
Thorn House, Upper St. Martin's Lane, London, WC2.

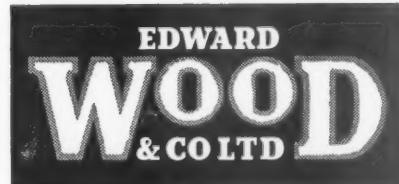
BUILDING

The scope of steelwork is unbounded. A new brochure "Building in Steel" details the facilities offered by WOODS and illustrates a selection of contracts. Send now for your copy.

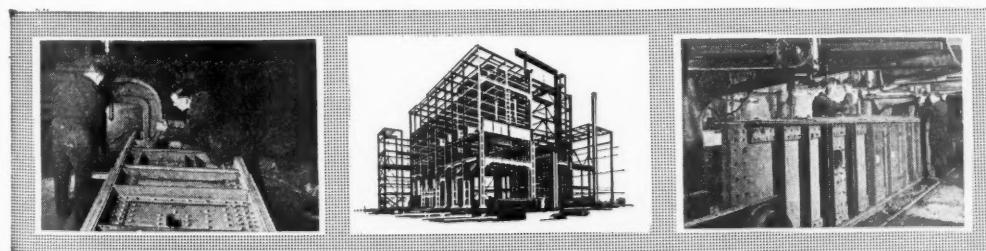
in Steel

—the people who count

Jim Edwards' smile is worth ten million! Just about that many rivets have been hammered home by him in forty fast-working years at Woods. A squad leader, Jim inserts hundreds of rivets a day with the pom-pom or hydraulic machine. He's a very useful member of the Works Committee too. We value this cheerful, energetic craftsman and all those like him at Woods. Continuity in service and craftsmanship have made and maintained our high reputation for steel construction.



CONSTRUCTIONAL ENGINEERS



Registered Office and Works:

OCEAN IRONWORKS · TRAFFORD PARK · MANCHESTER 17

Tel: Trafford Park 2341 (10 lines) London Office: 78 Buckingham Gate, S.W.1. Tel: Abbey 1948/9

dm WD105



aluminium suspended acoustic ceiling panels now made in this country!

Physicists of the world famous Pirelli organisation have designed an entirely new aluminium sound absorbing acoustic panel. This Pirelli Saga panel represents highest all-round efficiency in the important matter of noise control.

Pirelli Saga panels are very simple to fit, and they can be easily removed and replaced.

Pirelli Saga panels are attractively made. Standard size 2 x 2 ft. They are not at all expensive.

For full details, please write to Sole British Licensees:

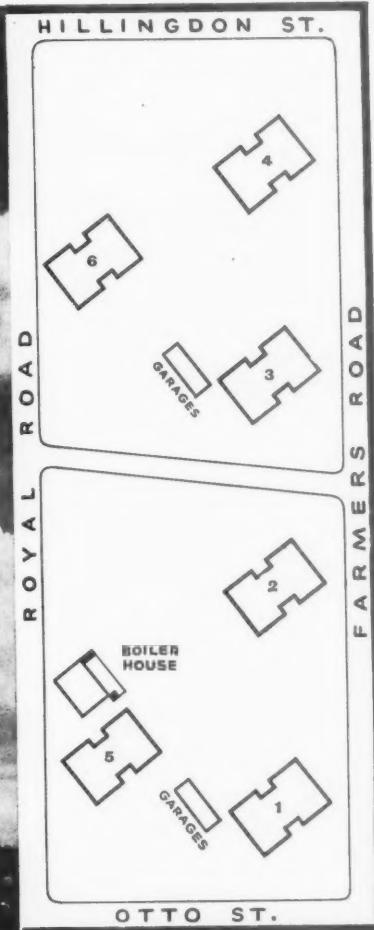
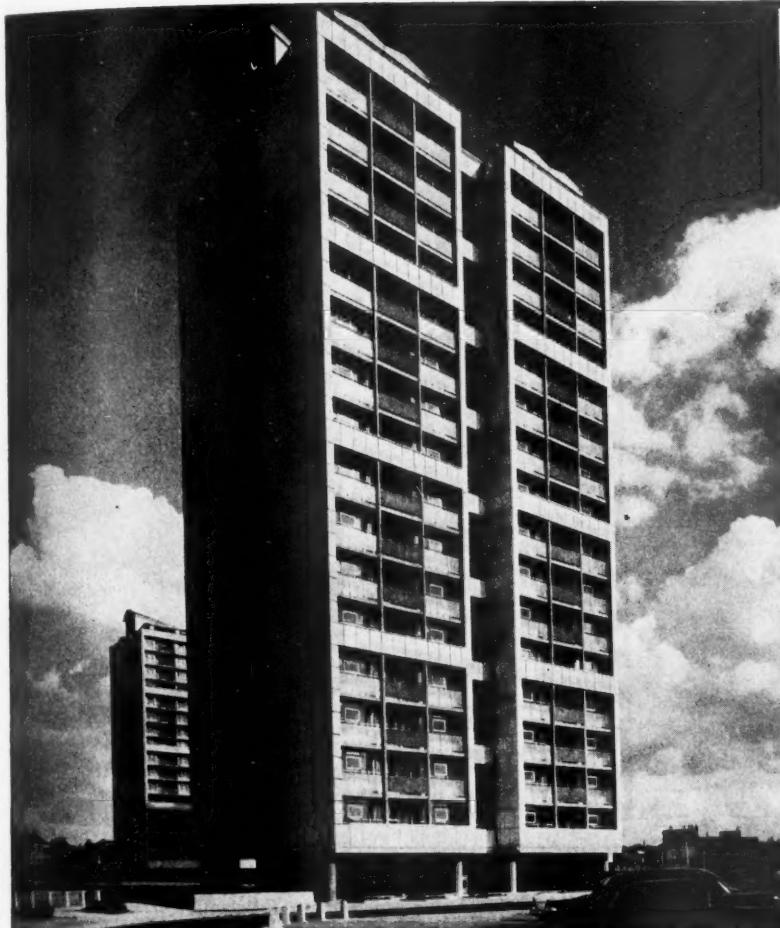
SUPER SILENT LIMITED

B-10 Great Titchfield Street, London W.1. Telephone: Museum 1191



for the L.C.C.

... top-flight flats for Londoners!



WATES contribution to the redevelopment of London is as strikingly apparent in the domestic direction as it is among the City's gleaming new office buildings. The L.C.C. Brandon Estate at Southwark (Principal Architect: Hubert Bennett, F.R.I.B.A.) is a fine example. This ambitious development demanded the resources of builders with special experience in "building high", for it comprises no less than six 18-storey 'point' blocks. Wates built them all and Wates built them well.



WATES LIMITED, 1260 London Road, Norbury, London, S.W.16 **POLLARDS 5000**



Whose glass do you see in windows, everywhere?

George Burch is growing up with glass, and one day he will learn to appreciate it. He is growing up with Pilkington Glass. Night and day the Pilkington Group's factories are making glass . . . glass for the windows in your home, for offices, and factories. And for spectacle and microscope lenses, for fluorescent tubes, and for insulation. Glass for all these and a hundred more wonderful things which are an essential part of your daily life come from the Pilkington Group . . . a great British industry; great in the achievements which are made possible only by its size and efficiency.

Pilkingtons
the greatest name
in the world of glass

THE PILKINGTON GROUP manufacturing Pilkington Glass, Chance Glass, Chance Pilkington Optical Glass and Fibreglass. Factories in Great Britain, Canada, Australia, New Zealand, South Africa, Argentina and Brazil.

above all...

PERMANITE

the first name one thinks of for . . .

built-up felt roofing

Consult Permanite Limited

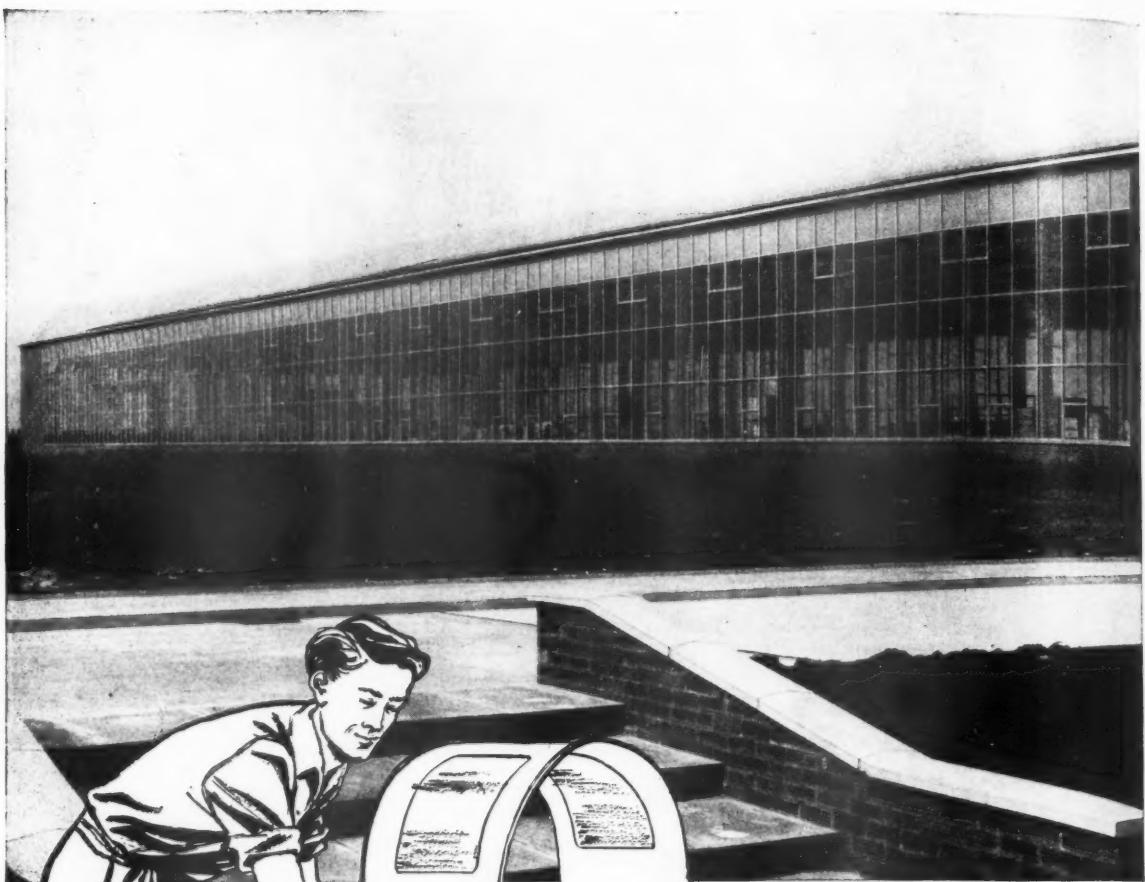
for technical advice

at the planning stage.

Also specialists in Asphalt Roofing, Flooring and Tanking.



permanite limited, based on london, birmingham, manchester and portsmouth.



Dowty Group Ltd., of Cheltenham. Architect, C. R. Kirby, A.R.I.B.A.



HILLS (WEST BROMWICH) LTD., ALBION ROAD, WEST BROMWICH, STAFFS.
Branches at Manchester, Bristol, Newcastle-on-Tyne, London and Glasgow

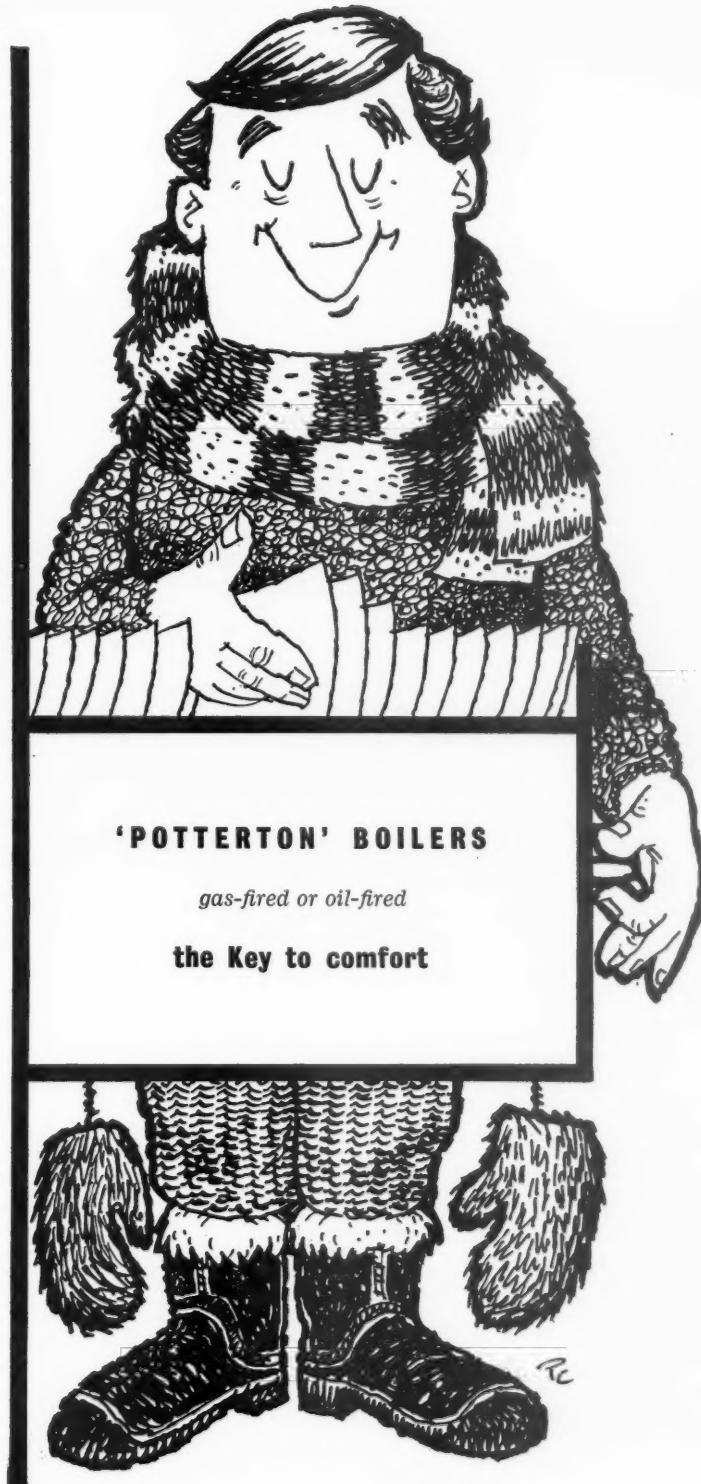
P4 (B)

building for prosperity

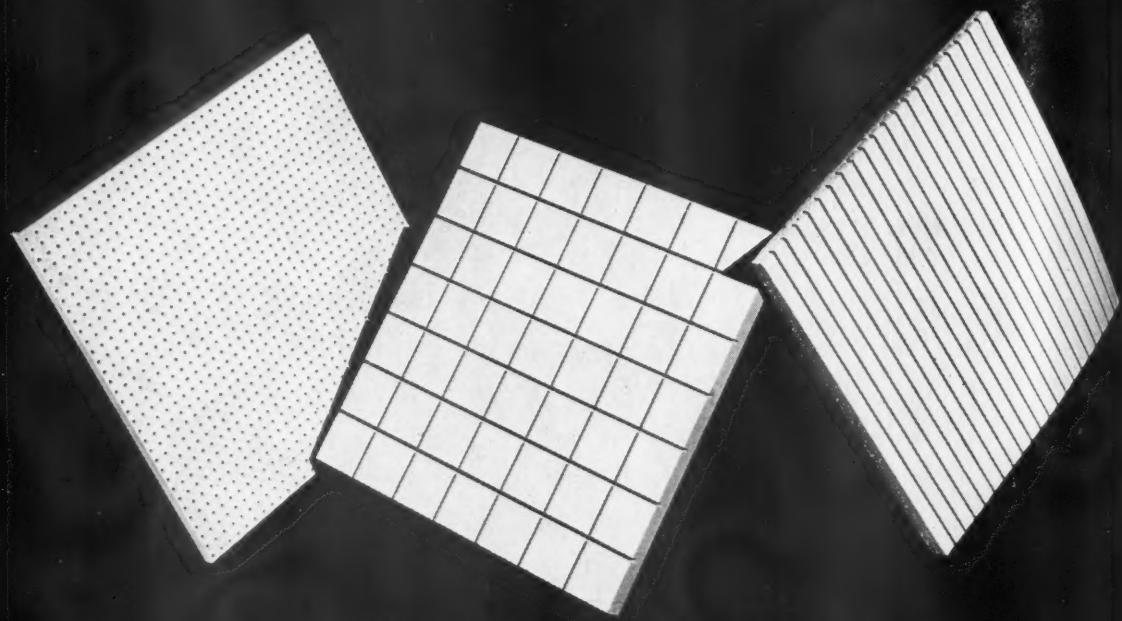
Hills Factory Construction Systems—swift, simple, economical—is keeping pace with Industry's demand for expansion. Buildings of every size, from single to five-storey construction, are being erected throughout the country, contributing to the national plan for prosperity. Please write to us if you would like to receive full information on Hills Factory Construction System.

HILLS
FACTORY CONSTRUCTION SYSTEM

When
central
heating
and
hot water
are needed
reach for
your
'Potterton'
file



CONTEMPORARY



ACOUSTICS!



Swiss pressed wood-fibre Perforated, Rilled and Chequered acoustic tiles and Rilled Boards 8' 2" in length, all Factory Primed.



Contemporary acoustic wall and ceiling treatments in new and decorative materials.



High acoustic efficiency, absorption co-efficients increasing progressively from 0.45 at 250 c.p.s. up to 0.90 at 4,000 c.p.s.



Low thermal conductivity (0.35 B.T.U/in./sq.ft./hr./°F diff.) thus providing valuable heat conservation at no extra cost.

Surveys, estimates, designs & specifications without obligation

HERMESEAL

HERMESEAL ACOUSTICS LIMITED

HEAD OFFICE: 4 PARK LANE, LONDON, W.1. Telephone: GROsvenor 4324 (5 lines).





Churchill Gardens Pimlico SW1

GLEESON ←

These magnificent blocks of modern flats were
constructed by us for the Westminster City Council.

Architects:

Powell & Moya, F/F.R.I.B.A.

Consulting Civil Engineers:

Scott & Wilson, Kirkpatrick & Partners

Director of Housing, Westminster City Council:

E. J. Edwards, F.R.I.B.A., F.R.I.C.S.

GLEESON

M. J. GLEESON (CONTRACTORS) LIMITED

Haredon House London Road North Cheam Surrey Telephone: Fairlands 4321 (10 lines)

TA3941

Elliotts of Reading

CRAFTSMEN IN WOOD OR METAL

St. William of York R.C. Church, Reading

A further example of efficient and responsible all-round collaboration between the Architect, the Contractor, and these two outstanding specialist firms.



Architects: Chas. Smith & Son, F.R.I.B.A.

Henderson

SLIDING DOOR GEAR

for any door, partition or window that slides or folds

Joinery and fixing by Samuel Elliott & Sons (Reading) Ltd. Gear and furniture by P. C. Henderson Ltd.

A Sliding and Folding Screen in 8 leaves collapsing to right and left, overall size

20 ft. x 14 ft. high. The leaves are constructed of Iroko $2\frac{1}{2}$ " thick having panels covered with leather on both sides. Top Hung with Henderson 'Council 21' End Folding Partition Gear.

Qualified Technical Representatives willingly wait upon Architects and Builders everywhere without obligation. Catalogue also available.

An excellent Drawing Office Service is at your disposal.

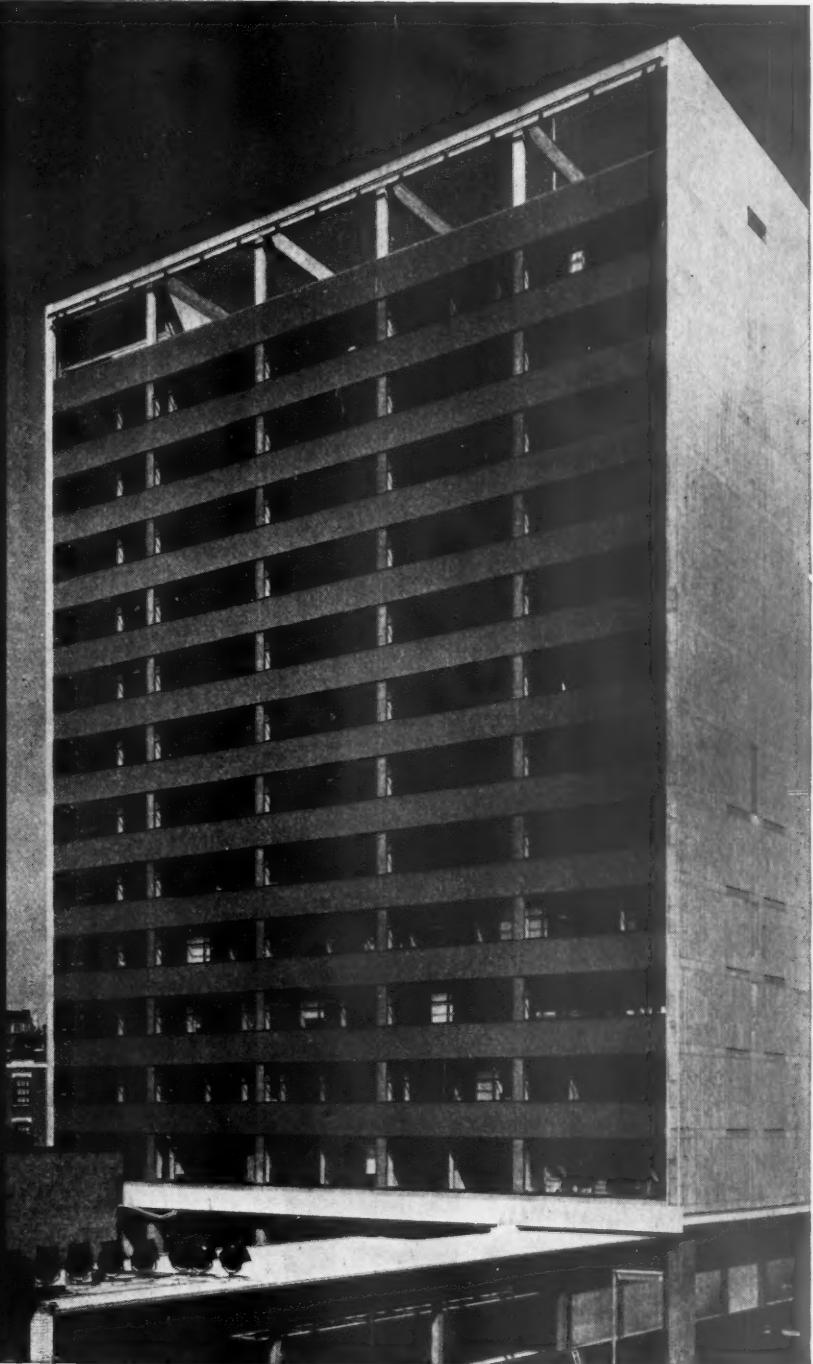
SAMUEL ELLIOTT & SONS (Reading)
LIMITED
Telephone: Reading 71536-7-8

P. C. HENDERSON LIMITED, Harold Hill,
Romford, Essex
Telephone: Ingrebourne 41111 (8 lines)

modern
architecture
and bigger,
finer
buildings
are changing
the face
of Britain . . .

but

Fosalsil
remains
the basis of
modern
flue
construction



THORN HOUSE, Upper St. Martin's Lane, London, W.C.2.

Architects: Messrs. Basil Spence & Partners.

Heating Consultants: Messrs. A. F. Myers & Partners.

Contractors: Messrs. Bovis Ltd.

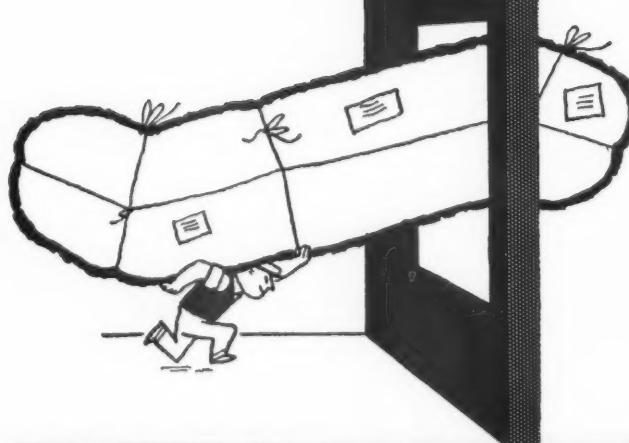
FOSALSIL flue bricks
were used throughout

Fosalsil

Made only by MOLER PRODUCTS LIMITED,
Hythe Works, Colchester phone: 73191(3 lines)

PACKAGED escalators

from J. & E. Hall



The only British-built packaged escalator, constructed by the largest manufacturers of escalators for stores, commercial and public buildings, and backed by 30 years' experience.

Passes through 10 ft. opening, cuts actual installation time to approximately 3 days, and ensures the minimum of interruption to normal business arrangements.

J. & E. Hall's escalator engineers are at all times at your service to discuss all aspects of escalator planning, installation and operation. *Write for publication 1011.*

J & E HALL LTD

A Member of the Hall-Thermotank Group

DARTFORD • KENT Tel: Dartford 23456

London Office:
60 Rochester Row, S.W.1 Tel: VICToria 0354

"Dad would have noticed the difference"



says * **DAVE CLUER**
at Peterborough

"When my Dad was a youngster he was bailiff for the Estate on which this pit is now being worked. They used to dig the knotts (Fletton term for clay) by hand. My word, though, it's mechanised now all right, from the pit, to the works—all the way."



David Cluer,
Pit Manager, 41 years
with the Company

- Modern methods of brickmaking on the scale necessary to satisfy the enormous appetite of the building industry demand that many varied and specialised services be available at all times.
- The organization built up by London Brick Company Limited over the years embraces not only the means to produce the bricks, but all the ancillary services necessary to maintain production at a high level.
- This organization is necessarily a complex one and calls for close co-ordination between production personnel and the men who keep them going—engineers, foundrymen, fitters, electricians, pit men and a host of other skilled craftsmen—all working as a team.

LONDON BRICK COMPANY LIMITED in the service of the building industry



Head Office: Africa House, Kingsway, London W.C.2. Telephone: HOLborn 8282

Midland District Office: Prudential Buildings, St. Philip's Place, Birmingham, 3. Telephone: Central 4141

South-Western District Office: 11 Orchard Street, Bristol 1. Telephone: Bristol 23004/5

Northern District Office: St. Paul's House, 20-22 St. Paul's Street, Leeds. Telephone: Leeds 20771



BY APPOINTMENT TO
HER MAJESTY QUEEN ELIZABETH II
BRICK MAKERS



Wenlock Barn Estate, Shoreditch,
London, E.1.

*Designed by: J. L. Sharrett,
Q.B.E., A.M.I.C.E., Borough Engineer.*

*Main Contractor:
H. Richardson & Sons Ltd.*

*Plastering Contractor:
MacDonnell Bros.*

'MURILITE'

Pre-mixed Perlite Plaster

is today finding an ever-increasing use in building projects at home and overseas.

Light in weight, it is easy to work and makes a considerable reduction in the all-round "dead load", thus affording an important saving in the cost of the main structure.

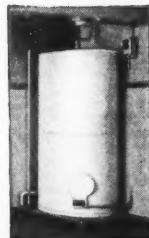
"MURILITE" is pre-mixed at our Works and no sand whatever is required as an additive on the Site. It has high properties of fire resistance and provides improved thermal insulation which reduces heat loss through walls and ceilings, minimizes condensation and lessens the risk of pattern staining.

Gypsum based, "MURILITE" is free from shrinkage cracks and the Bonding Coat grade—which incorporates Vermiculite as the aggregate—adheres excellently to concrete. "MURILITE" Plaster contains no ingredients harmful to decoration and may be safely decorated as soon as it is dry.

We should like to tell you more about "MURILITE"—or offer expert advice on any of your plastering problems.



CAFFERATA & CO. LTD.
NEWARK · NOTTINGHAMSHIRE
TEL: NEWARK 2060 TELEGRAMS: 'CAFFERATA' NEWARK



G.E.C. industrial pressure type storage water heaters supply large quantities of hot water to ranges of wash basins, shower fittings, wash fountains, and for various factory processes.

**HOT WATER
COMES
FAST AND
CHEAP BY**

G.E.C.

G.E.C. Electric Storage Water Heaters offer these advantages over other forms of water heating.

- Heaters are clean. No combustion; no fumes.
- Heaters run economically. Advantage can be taken of 'off-peak' tariffs, and thermostatic control ensures minimum necessary current consumption. Virtually no maintenance is necessary. Lagging prevents heat loss.
- Heaters can be installed easily. Few if any structural alterations are necessary, and systems can be readily extended later on. And because they are electric, they require neither stoker nor fuel storage space.

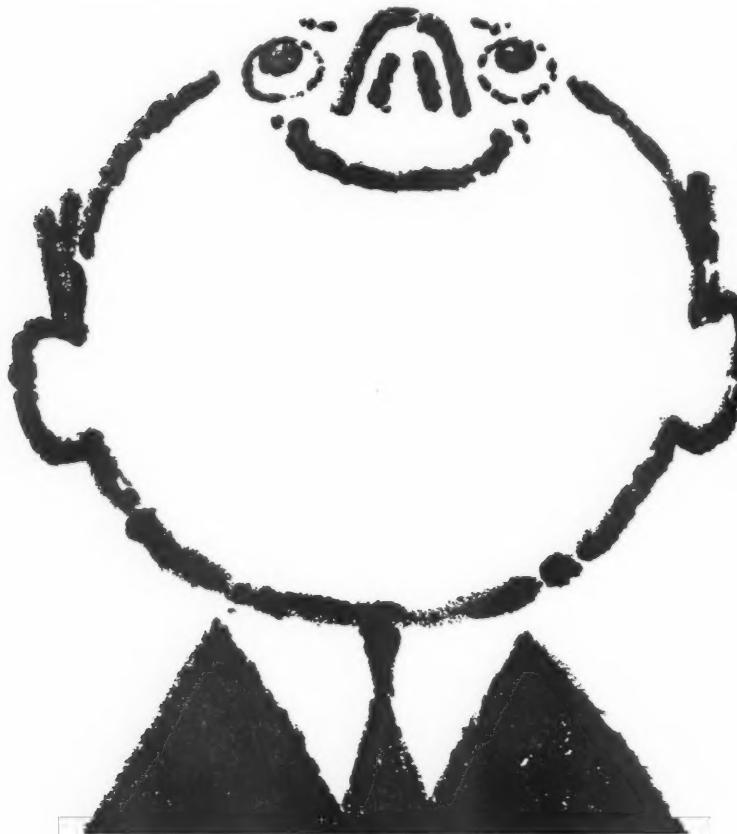
Electric Storage Water Heaters

Heater capacities from 50—300 gallons are available. To find out which would best suit your needs, write without obligation for publication HO 2992 to the free Advisory Service of the Industrial Heating Division The General Electric Company Limited Magnet House Kingsway London WC2



IF
YOU
WANT
BRIGHTER
INDUSTRIAL
CEILINGS
YOU
SHOULD
KNOW
ABOUT
Paramount
PLASTIC
FACED
PLASTERBOARD

Brighter ceilings mean higher morale . . . increased production . . . less maintenance. How to erect one? Simple—contact British Plaster Board. They've a ready-made, colourful solution. In fact they've written some interesting literature on the subject. Send for your copy NOW!



THE BRITISH PLASTER BOARD (Manufacturing) LTD. Ferguson House, 15-17 Marylebone Road, London, N.W.1.

AP217

G
G R E
ESTA

RIBA J

GABLE
VENTILAT
In ex
wid
With
long

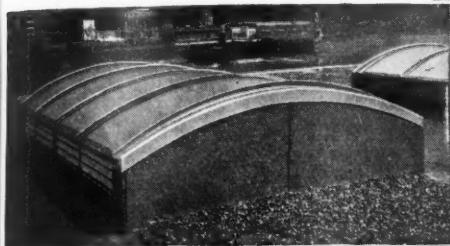
DOME
To fit cir
18" x 1
rectangul
30" x 30
glass. "P
glass. Co
gauge. a
after m
fitted w
external

Write to
range of

Ventilation *plus* daylight

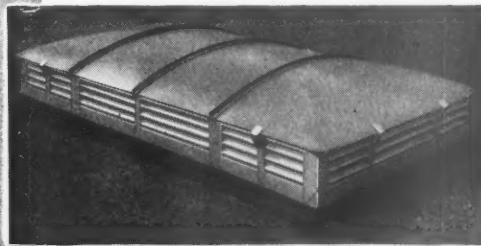
WITH GREENWOOD AIRVAC ROOFLIGHT VENTILATORS

Specifically designed to give both low overall height and unobtrusive appearance, the Greenwood Airvac patented range of Dome and Continuous Rooflight Ventilators provides fully weathered controllable or permanent ventilation with maximum daylight.



GABLE END CONTINUOUS ROOFLIGHT VENTILATORS.

In extended lengths from 4' 0" and nominal widths of 3' 0" to 7' 0" in multiples of 6". With internal controllable shutters for long arm or remote control operation.



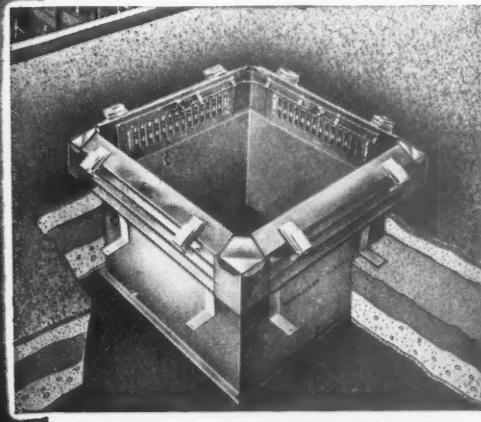
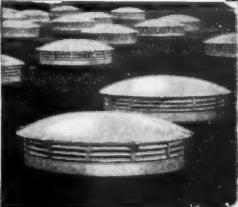
HALF DOME END CONTINUOUS ROOFLIGHT VENTILATORS.

In extended lengths from 8' 0" and nominal widths from 3' 0" to 6' 0", in multiples of 6" to 4' 6". With internal controllable shutters for long arm or remote control operation.



DOME VENTILATORS.

To fit circular domes from 18" x 72" diameter or rectangular domes from 30" x 30" to 48" x 72" in glass, "Perspex" or fibreglass. Constructed of heavy gauge steel, galvanized after manufacture, and fitted with weatherproof external louvres.



VENTILATED UPSTANDS AND LINERS.
(Dome removed)

For building into roof structures. To suit all sizes of circular and rectangular domes. These units obviate the need for prepared curbs, special shuttering and rendering of roof openings, giving improved light value. Unventilated linings are also available.

Write today for illustrated technical leaflets on the full range of Dome and Continuous Rooflight Ventilators.

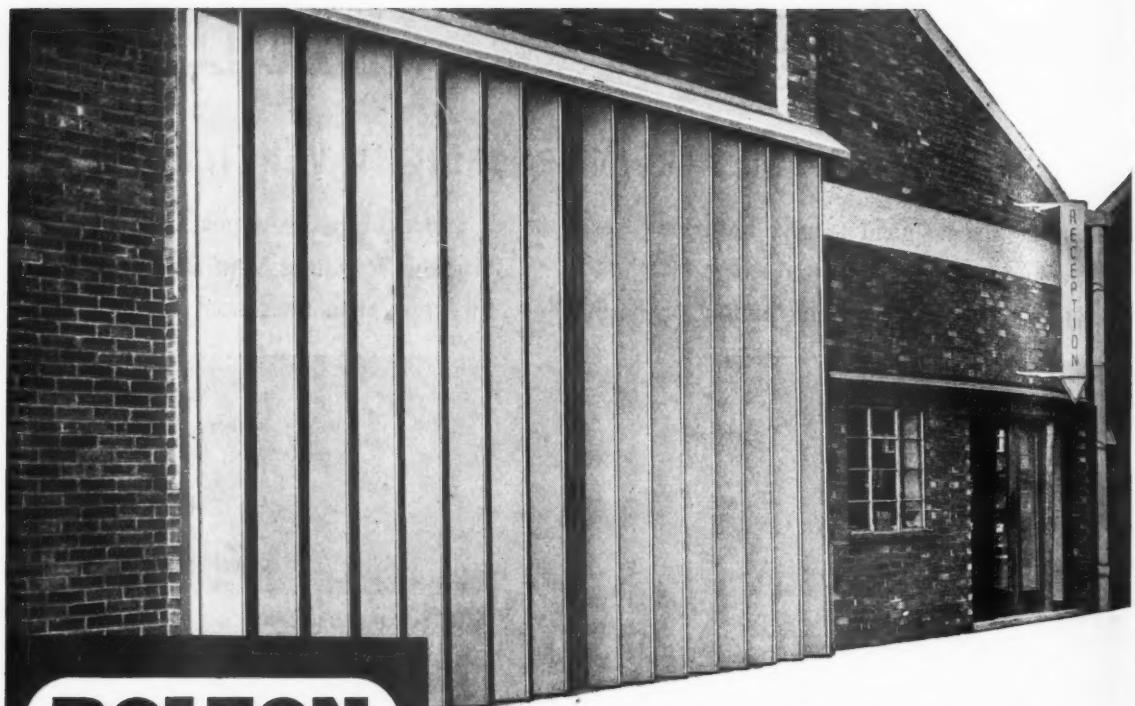
Greenwood Airvac *ventilation*
GREENWOOD'S AND AIRVAC VENTILATING COMPANY LTD

ESTABLISHED 1879.

PATENTEES, DESIGNERS AND MANUFACTURERS OF
NATURAL AND MECHANICAL VENTILATING
EQUIPMENT.



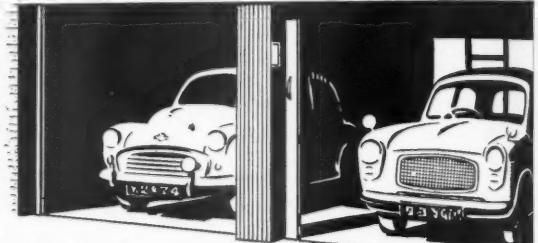
BEACON HOUSE, KINGSWAY, LONDON, W.C.2.
CHANCERY 8135 (4 lines). Grams: 'AIRVAC', LONDON.



BOLTON PATENT SHUTTER DOORS

Top hung - trouble free!

These doors have set the standard of quality for a quarter of a century and more Bolton Shutter Doors are in service throughout the world than any other make. Full details of their construction and their wide range of applications are given in our latest catalogue reference RB 345.



BOLTON The BIG name in doors

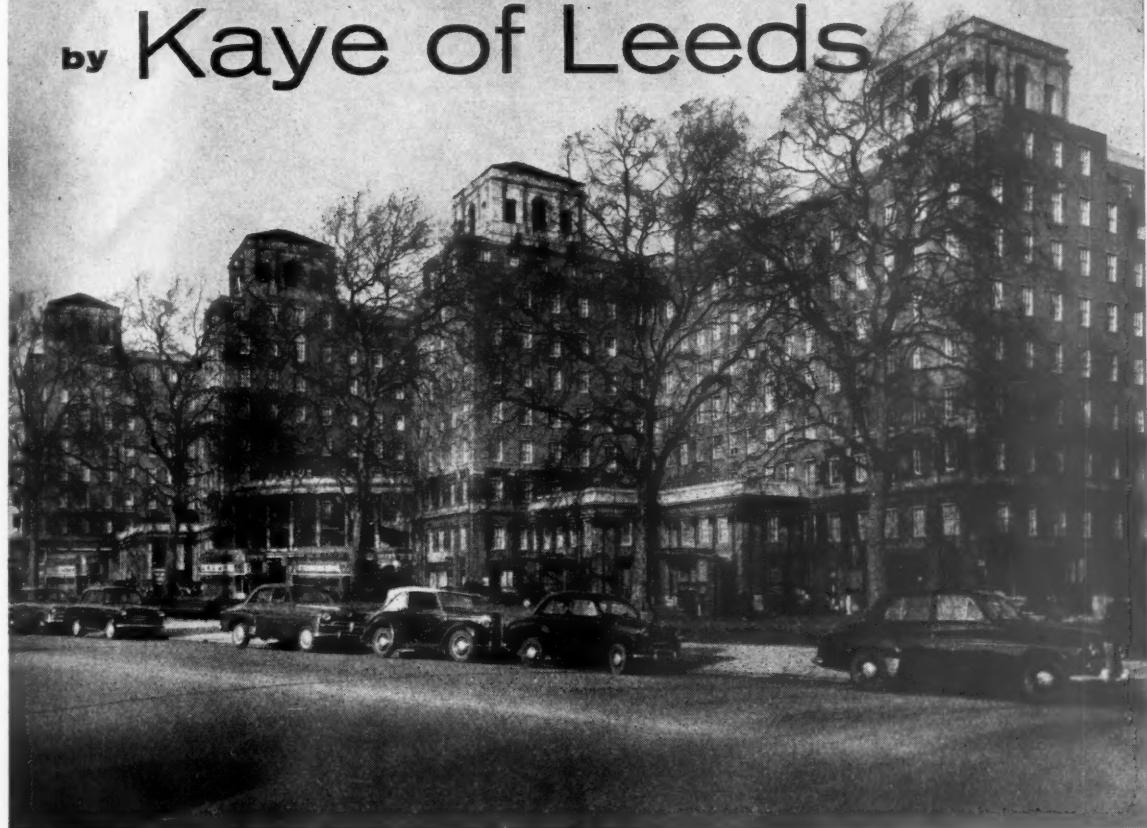


BOLTON GATE CO LTD BOLTON LANCS

Branches in London, Glasgow, Birmingham and towns throughout the country

©BG345

1,000 rooms, 1,020 locks and 3,084 keys by Kaye of Leeds



Grosvenor House's requirements for locks with master, sub-master and servant keys were satisfactorily fulfilled by Joseph Kaye & Sons Ltd. Specify Kaye Locks and Door Furniture for quality finish and robust traditional craftsmanship. They have nearly a century's experience behind them.

FOR EVERY APPLICATION

- Hotel Locks
- Mortice Locks
- Sliding Door Locks
- Emergency Door Fittings
- Padlocks
- Latches
- Rim Locks
- Cupboard Locks
- Stabilisers
- Drawer and Desk Locks

TECHNICAL PERFECTION

- 4 Lever Locks
- 750 Differs off Levers
- Differs from Levers and Wards are almost unlimited
- Followers are of hard resistant Brass
- Forends are of hard resistant Brass
- Phosphor Bronze Springs to Levers
- The 'K' design, four lever Lock is for greater security
- The Locks can be made in suites with Sub-master and Master Keys

ILLUSTRATED LITERATURE IS AVAILABLE ON REQUEST

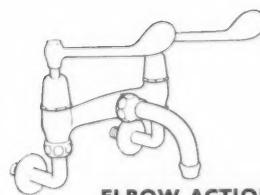
Joseph Kaye & Sons Ltd.,

Established 1864

Lock Works, Leeds 10. Telephone: 20887
London Office: 1-5, New Bond Street, London W.1. Telephone: HYDe Park 2956.



MODERN HOSPITAL FITTINGS



ELBOW ACTION
WALL FITTING

Elbow action fittings

expertly designed for today's and tomorrow's modern hospitals. These Elbow Action fittings are of massive sturdiness, the sparkling hand-polished chromium plated finish so easy to keep clean.

B.B.C.'s 20 years' leadership in designing and making QUALITY FITTINGS has led to preference by Architects for style—by Builders for practical appeal—by users for durability.

Stocked and sold by all leading Builders' Merchants. Further details gladly sent on request.



Quality
Fittings

BARKING BRASSWARE CO. LIMITED

Dept. R.A.15 • RIVER ROAD • BARKING • ESSEX

It pays you and your clients to put in *solid fuel* central heating



Lowest running costs. The big news in central heating these days is the amazing cheapness of the solid fuel systems. For example, the average weekly running cost for a two- or three-radiator system can be as little as 11/1d! Just compare that with oil, gas and electricity—see chart on right.

Lower installation costs. Compared with oil, solid fuel systems are much cheaper to buy and install. The new solid fuel boilers are really streamlined and require very little attention. They are thermostatically controlled and finished in gleaming vitreous enamel in a range of modern colours.

N.C.B. Housewarming Plan—offers a personal loan to cover the cost of a central heating installation. Low interest—five years to pay—tax relief.

Lowest maintenance costs. Solid fuel systems cost practically nothing to maintain. But with other fuels, skilled maintenance is necessary and this can cost from £5 to £15 per year—another 2/- to 6/- a week on the running cost.

Compare the costs. These are typical weekly costs, averaged over the year, for centrally heating a three-bedroomed house or bungalow—and hot water summer and winter. Look how much cheaper solid fuel is.

6 or 7 radiators and hot water ▼			
2 or 3 radiators and hot water ▼			
COKE In independent boiler	10/- per cwt	11/1d	16/8d
SMALL ANTHRACITE In gravity feed boiler	12/6d per cwt	—	14/8d
GAS	1/4d therm plus, say, 2/8d a week standing charge	16/1d	23/6d
ELECTRICITY	1d unit (No standing charge included)	18/2d	29/10d
OIL	1/5½d gallon	*13/-	*23/-

* plus 2/- to 6/- a week maintenance cost.

Write for FREE booklet on Central Heating and list of other technical publications to the Coal Utilisation Council, 3 Upper Belgrave Street, London, SW1. Also available 'Central Heating for Houses', a complete 120-page illustrated survey of all the various systems available, from the open-fire-and-back-boiler to the small pipe system. Copies 2/6d each.

The cheapest
central heating
there is—
SOLID FUEL



ISSUED BY THE COAL UTILISATION COUNCIL

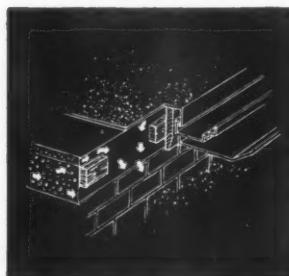
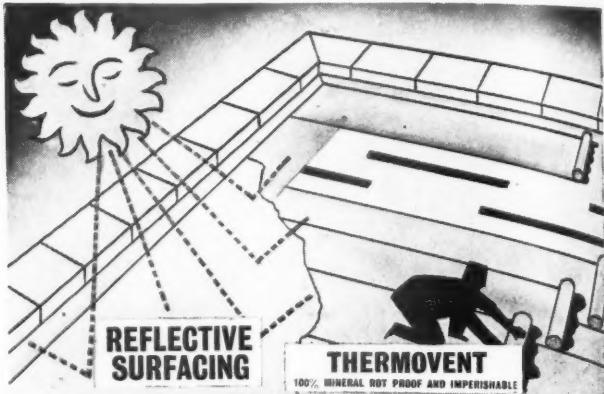
The THERMOVENT system of roof ventilation . . .

. . . a technique designed to protect the weather-proofing of flat roof structures against influences arising from:

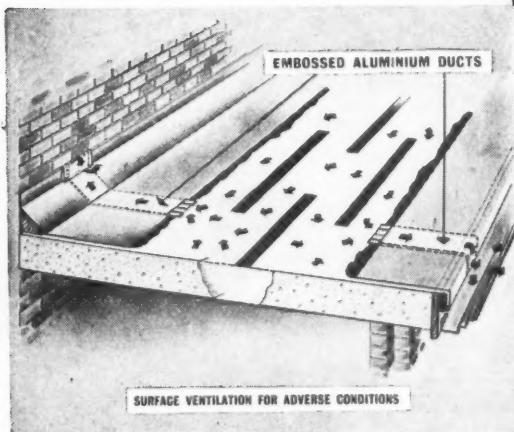
- * Moisture and air in insulation
- * Heat build-up on insulation
- * Water in lightweight concrete
- * Roof movement

Thermovent is laid by the isolated system combining frame bonding and anchor strips to permit free vapour dispersal. The waterproofing is finished with a heavy stone surfacing to secure maximum reflectivity.

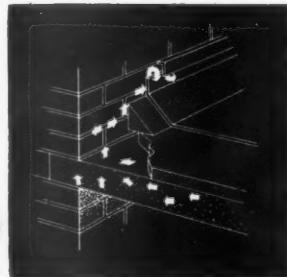
Where conditions are adverse surface ventilation is provided and metal ducts are fixed to relieve pressure to the outside air.



Drying in depth for extreme conditions is arranged at planning stage.



Typical detail is shown but others are available to suit design and advice will be given on request.



D. ANDERSON & SON LTD

STRETFORD, MANCHESTER Telephone: Longford 4444
OLD FORD, LONDON, E.3. Telephone: Amherst 9381



A Modern Rail for Modern Buildings



INSET TYPE CURTAIN RAILS

SILENT GLISS provides an elegant, streamlined system of curtain rails in a variety of fittings for all requirements.

In harmony with the best modern architecture, SILENT GLISS combines the virtues of silent working and simplicity with economy.

White nylon gliders slide noiselessly in aluminium channels, anodised to prevent corrosion and siliconised.

There are various inset types for Plaster and Wood, for Hand-drawn and Cord-drawn curtains of all weights, in addition to types for overhead and face-fixing.



Some recent Contracts in which SILENT GLISS was used and their Architects:

R.I.B.A.—MEMBERS' ROOM
Alison Smithson & W. G. Howell

NEW U.S.A. EMBASSY
Yorke Rosenberg & Mardall

IMP. COLLEGE OF SCIENCE
Hall of Residence
Richard Sheppard, Robson & Partners

UNIVERSITY OF SOUTHAMPTON
Chamberlain Hall
Basil Spence & Partners

NORTHAMPTON GEN. HOSPITAL
Sir John Brown, A. E. Henson & Partners

SILENT GLISS LTD. 29-30 WINDMILL STREET
(off Tottenham Ct. Rd.) **LONDON W.I.**

PHONE MUSEUM 9484 (3 Lines)

SHIELD AGAINST **FIRE!**



BRUNEX Fibre Board has been world-famous for many years because of its thermal and sound insulating qualities. Now it is available factory processed with 'Albi-R' Fire Retardant Coating, which raises it to Class 1 'Surface Spread of Flame' (B.S. 476: 1953). The board has a hard white finish, which can be overpainted if desired without detracting from its fire-retardant properties. Flameproofed BRUNEX is the answer to most industrial insulation problems!

For further information on Brunex Boards,
write to Sole Agents in Great Britain:

JAMES WEBSTER & BRO. LTD.

Head Office: Webster House, London Office: Dashwood House,
Derby Road, Bootle, Liverpool 20 69 Old Broad St., London, E.C.2

Please send details of Brunex Flameproofed Board

NAME _____

ADDRESS _____

W.I. _____ R.I. _____

Brunex is a product of **BERGER LANGMOEN Norway**



Right from the start . . .



The Trianco 0.400 oil fired boiler of 400,000 B.t.u. capacity.

The importance of planning the heating installation of any building right from the start is appreciated by architects and builders more than ever today.

Trianco provide at this stage, expert advice and practical assistance backed by a range of boilers catering for every need, both oil and solid fuel fired. Trianco boilers enjoy an unrivalled reputation not only for their efficiency and economy, but for their ease of installation and operation, and the years of trouble-free heating they provide.

Trianco solid fuel boilers range from 50,000 B.t.u. to 250,000 B.t.u. in the domestic class, and from 250,000 B.t.u. to 2,000,000 B.t.u. in the industrial range, employing automatic fuel feed and ash disposal.

Trianco oil fired boilers range from 100,000 B.t.u. to 2,000,000 B.t.u. burning 35 sec. gas oil and 200 fuel oil in the larger capacities.



TRIANCO
automatic boilers

Write now for current brochures on the complete TRIANCO Range
TRIANCO LTD. • IMBER COURT • EAST MOLESEY • SURREY • Tel: EMBERBROOK 3300

The Griffin-Grundy 'TEN-POINT' All Metal Laboratory Furniture



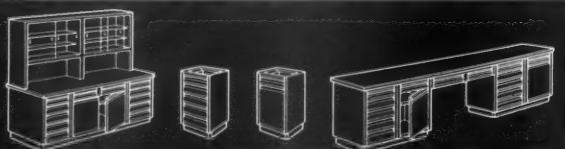
- 1 Front and rear welded frames provide maximum rigidity.
- 2 Removable back gives access to services.
- 3 Metal drawer tracks and slides incorporate a cam adjustment.
- 4 Rubber buffers to drawers and doors ensure quiet operation.
- 5 Recessed door and drawer-handles improve appearance.
- 6 Adjustable shelves in cupboard units.
- 7 Easily adjusted levelling feet fitted with P.V.C. shoes protect floor.
- 8 Detachable toe plinths.
- 9 Zinc coated mild steel construction for added protection.
- 10 Stoved melamine-base enamel inside and outside for easy cleaning.

Units dismantle for shipment resulting in lower freight charges, and easy assembly on site. Full instructions are provided with each installation. Write for literature today.



Griffin & George
(LABORATORY CONSTRUCTION) LIMITED

Morden Road Mitcham Surrey Mitcham 9201
Walsall Road Perry Barr Birmingham 22B Birchfields 5002
in association with Grundy Equipment Limited.



MEMBER OF GRIFFIN & GEORGE GROUP • LONDON • BRISTOL • BIRMINGHAM • MANCHESTER • NEWCASTLE UPON TYNE • GLASGOW

"pro
For it gi
tangible f
Consider
simple, y
Notice ho
cedar he
gleaming
but, like
Its smooth
lines, wh
point goo
break, ev
(easily re
never var
How fort
embodied
Perhaps t
in their d

TO L

KOH-I

Please sen

NAME OF

ADDRESS

NAME OF



"probably the most potent instrument in the world"

For it gives most of man's thoughts and aspirations their first tangible form.

Consider a pencil. What an elegant little shaft it is! Basically simple, yet how indispensable to the most complex design! Notice how comfortably it sits in the fingers; for the polished cedar hexagon of a well-bred pencil with its many coats of gleaming lacquer, never forces itself upon one's consciousness, but, like a good servant, unobtrusively awaits one's bidding. Its smooth dense lead will give perfect reproduction of the finest lines, which nevertheless can easily be erased. The perfect point good humouredly stands heavy pressure and does not break, even when dropped. Pick up any degree from 6H to 2B (easily recognised by the coloured ends), they are true and never vary.

How fortunate is the draughtsman who finds all these attributes embodied in one pencil!

Perhaps that is why Rolls-Royce exclusively specify Koh-i-noor in their drawing offices.



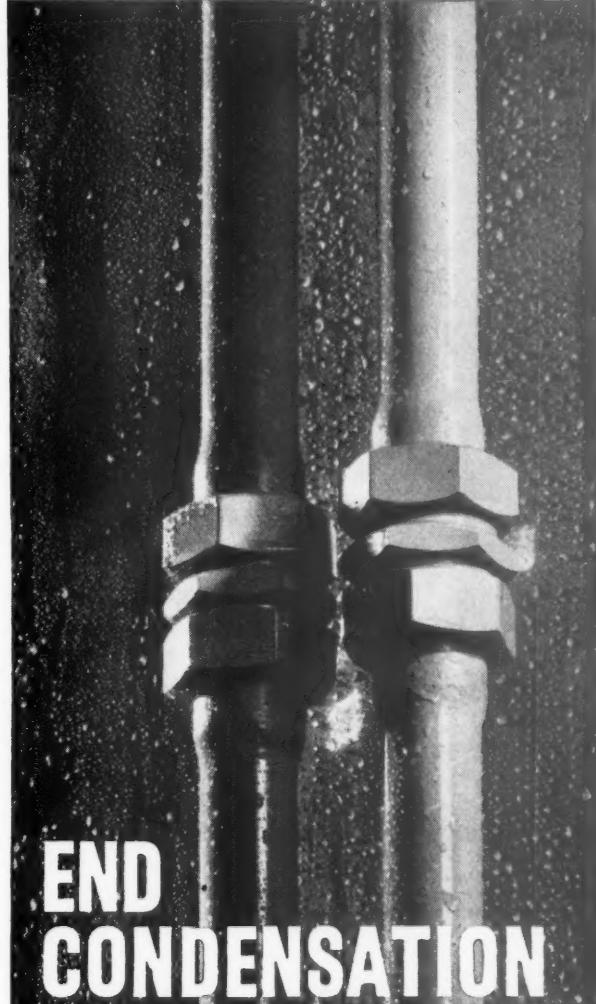
TO L. & C. HARDTMUTH (GREAT BRITAIN) LIMITED
KOH-I-NOOR FACTORY, CHARD, SOMERSET

Please send free samples of Koh-i-noor Draughtsman pencils for testing.

NAME OF COMPANY _____

ADDRESS _____

NAME OF CHIEF DRAUGHTSMAN _____



END CONDENSATION WITH SECULATE

You can now fully protect *any* kind of surface (brick, concrete, cement, plaster, wood, hardboard, metals, asbestos, breeze blocks) against even the heaviest condensation by using Seculate Anti-Condensation Compound.

Seculate has been successfully used for internal protection in factories, laundries, canteens, sterilising rooms, churches, ball-rooms, commercial vehicles and aircraft. It is quick-drying, washable, durable, won't flake off, and gives a perfect decorative finish. It also reduces the rate of flame spread.

Seculate is a simple, economical and efficient way of defeating condensation and it is easy to apply. Write to Seculate Ltd. for fully-explanatory leaflets, or ask our Technical Department for individual advice. You'll be glad you did.



SECULATE LTD., 7-8 ST. JAMES'S STREET,
LONDON, S.W.1. TELEPHONE: WHITEHALL 5772

A MEMBER OF THE FIRTH CLEVELAND GROUP



CRC 145C

ROTA VAC

in all the best boiler houses

Hospital service calls for the utmost in efficiency and reliability—service that the world of public undertakings and industry has learnt to expect from Rotavac oil-firing. Rotavac provides high efficiency atomisation with minimum maintenance (no moving

parts), perfect flame form, automatic control and the economy of the cheapest liquid fuels. Backed by nation-wide spares and after sales service.

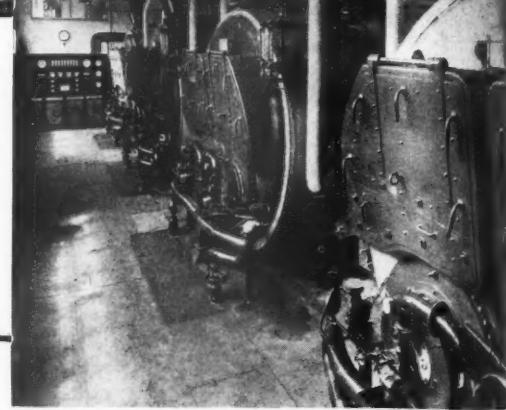


Photo by courtesy of Queen Mary's (Roehampton) Hospital. Boiler plant includes four Marshall Three-pass Economic boilers each fired with two Rotavac No. 3 WSF Burners.

NU-WAY HEATING PLANTS LTD. (Box B474), DROITWICH

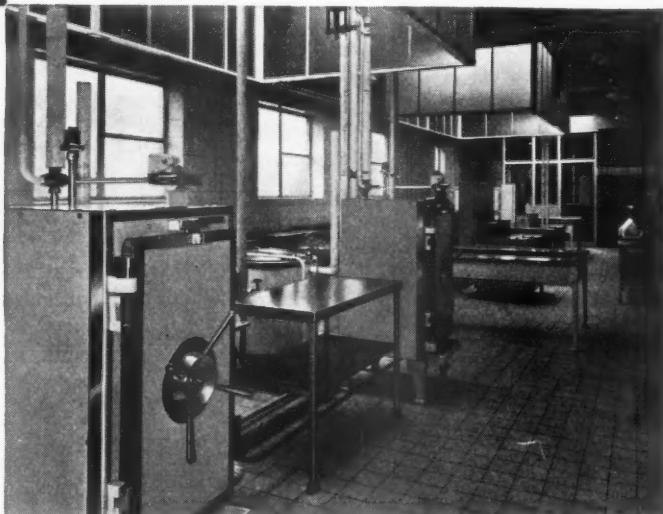
and at: LONDON, MANCHESTER, NEWCASTLE, GLASGOW, BELFAST, DUBLIN, BRISTOL

Moorwoods

Makers of large scale
cooking equipment
and complete
kitchen installations

Architects throughout the country have entrusted the equipping of canteens and kitchens to Moorwoods—the firm they know will plan and build to the highest standards.

The steaming oven in the foreground of the illustration, like all the rest of the equipment in this modern works canteen, came from Moorwoods. We shall be pleased to learn of your requirements.



Moorwoods Ltd

For people who are satisfied with the best

HARLESTON IRON WORKS
London Office: VINCENT HOUSE, VINCENT SQUARE, LONDON S.W.1.

SHEFFIELD 4.

Phone: SHEFFIELD 23063 (4 lines)
Phone: Tate Gallery 2591

UNIQUE *Spiral* **BALANCE**

**Many
famous
wood and
metal
window
manufacturers
incorporate**

Unique
**sash
balances**

manufactured by
WESTLAND ENGINEERS LTD.
YEOVIL
Telephone: Yeovil 2231-2



NON-STANDARD

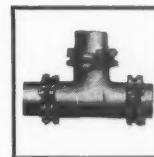
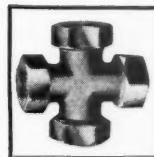
AND STANDARD TOO

All high standard
pipe fittings from

KONTITE

A MEMBER OF THE ALENCO GROUP OF COMPANIES

Kontite's range of 22,000 standard fittings for copper tube is the biggest in the business. Most of these can be supplied straight from stock. Specials take only a little longer. That's what makes Kontite service the *best* in the business. First class materials and the proved efficiency of Kontite Gunmetal fittings are your guarantee of complete reliability.



KAY & CO. (ENGINEERS) LTD.
BOLTON BRASS WORKS • BOLTON • LANCS.
TELEPHONE: BOLTON 21041/4



Plenum heat unit

The unit is designed for use with any of our standard types of locker, and is specifically intended for the smaller size of Amenity Block which does not justify a centralised heating plant.

It fully covers all the Welfare requirements for heating and drying at very low running costs with most modest capital outlay.

Our technical representative will be pleased to give you full details of this important addition to our lockering service.

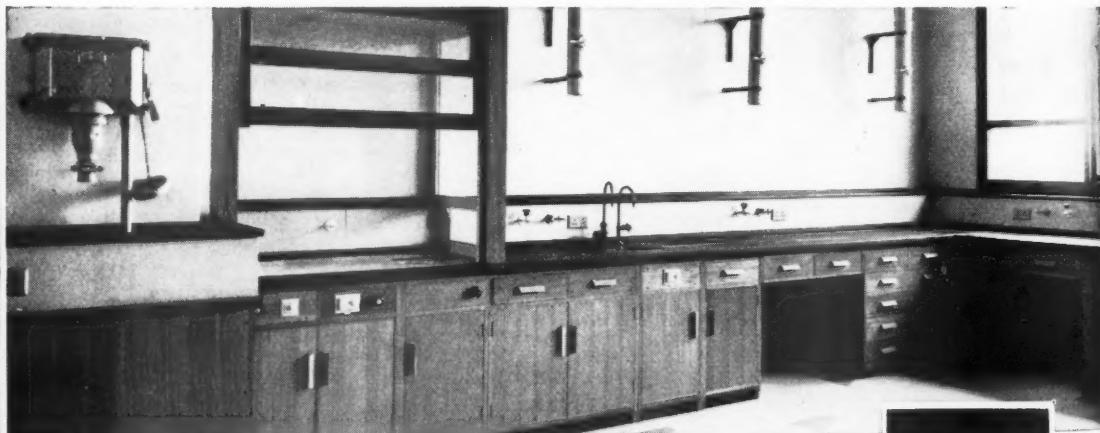
The illustrations show typical heater unit, and also the unit fitted to a single tier locker aisle.

SPEEDWELL
GEAR CASE CO. LTD.

TAME ROAD, WITTON, BIRMINGHAM 6.

PHONE EAST 2261 GRAMS "SPEEDWELL" BIRMINGHAM 6.

Laboratory Furniture designed for maximum efficiency



This is one of the new laboratories of the Laporte Titanium Co. Ltd., Stalingborough. The company specified furniture by the specialists in this field, Cygnet Joinery. They knew the Cygnet service would save considerable trouble and make for optimum efficiency in the end product. Cygnet laboratory furniture, craftsman-made and specialist-designed, comes in a wide standard range, or as specified. An experienced technical staff is ready to advise you on laboratory design and layout.

Send now for full details



CYGNET JOINERY LTD • HIGHER SWAN LANE • BOLTON • Telephone: Bolton 10140 (10 lines)

BOLDINGS

invite
you
to
view
the
finest
quality
sanitary
fittings
in
their
showrooms
at

58 Davies St., London, W.1



JOHN BOLDING & SON LTD.

Grosvenor Works, Davies St., London, W.1

Telephone: MAYfair 6617



FOR
GREATER STRENGTH
AND
LONGER LIFE
SPECIFY

NORVIC

PLASTIC COVERED

CHAIN LINK FENCING

★ **OUTLASTS GALVANIZED FENCING**

Norvic Plastic Covering protects from rust and corrosion.

★ **RETAINS ITS GOOD LOOKS FOR YEARS**

Norvic Plastic Covering keeps its colour long after other fences have yielded to the atmosphere.

★ **COSTS LESS IN THE LONG RUN**

The slight increase in initial cost is more than offset by longer life.



SPECIFICATION

Roll length 25 yds.

Mesh 1", 1 $\frac{1}{4}$ ", 1 $\frac{1}{2}$ ", 1 $\frac{3}{4}$ ", 2".

Gauges 12 $\frac{1}{2}$, 10 $\frac{1}{2}$, 10 and 9 $\frac{1}{2}$ overall with galvanized or bright steel core.

Width From 30 in. up to 13 ft. in 6-in. stages.

Colour Standard Dark Green. Special colours to order.

Line Wires Plastic covered.

BARNARDS LIMITED

NORWICH Telephone 47321

London: Mansion House 8597

Birmingham: Midland 3555



self-extinguishing

HETRON* RESINS

IN BUILDING

Hetron Resins, polyesters based on Het* Acid, are rapidly being acclaimed as new and versatile fabricating materials. As well as offering all the advantages of normal low-temperature-setting polyesters, Hetron Resins do not support combustion. When the source of heat is removed, flames die immediately. *Fire cannot spread.*

In addition, Hetron Resins offer fabricators:

- High strength with light weight
- Non-deterioration of fire-retarding properties in all climates
- Resistance to corrosion and chemical attack
- Resistance to temperatures up to 150°C.

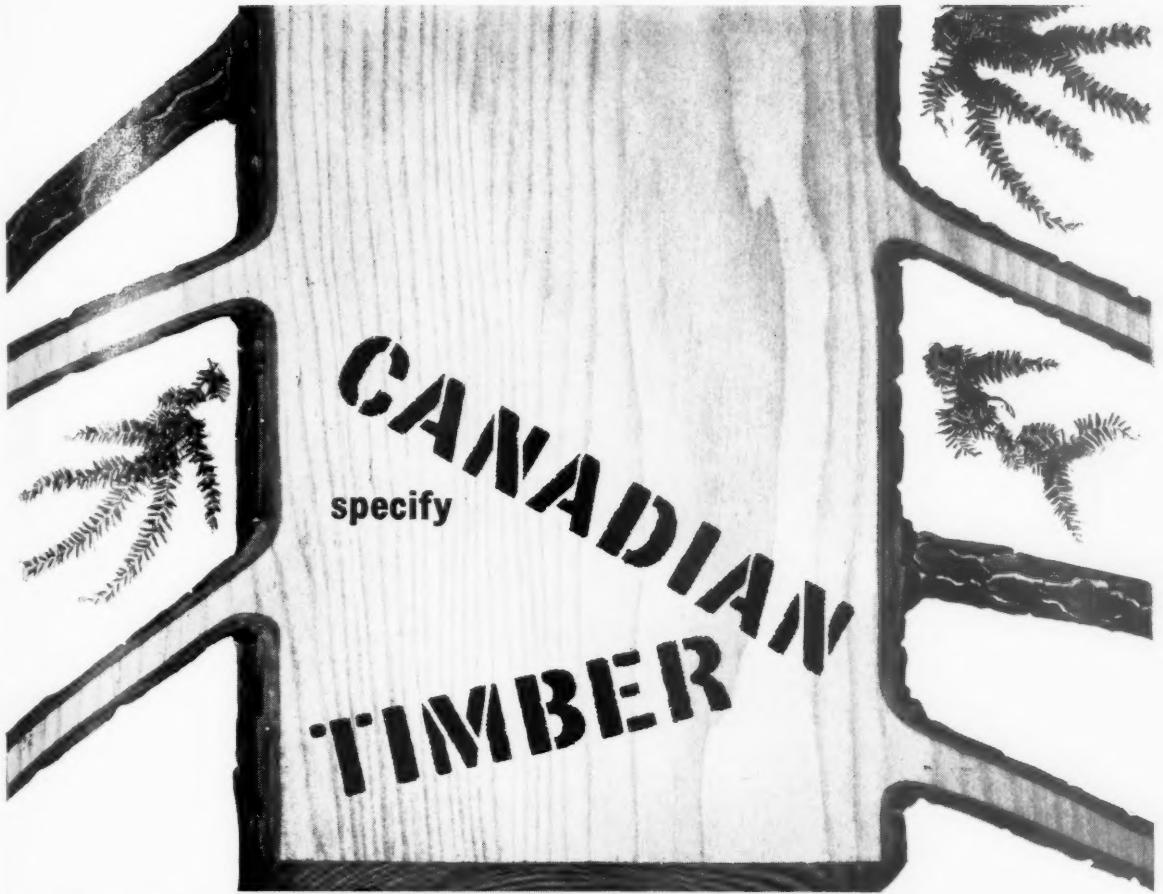
Please write to us for full details of the many applications of Hetron Resins

ALBRIGHT & WILSON (Mfg) LTD.

Section HR2, Organic Chemical Dept.,
1 Knightsbridge Green, London, S.W.1. Tel: KENsington 3422

Glass fibre polyester laminates have long been chosen for roof lighting and translucent decorative panels because of superior strength, low maintenance costs and good diffused light. Now a polyester based on Het Acid offers architects and builders the great additional advantage of being self-extinguishing. And tests have proved it! A roof 100 ft by 20 ft, made of such resin, was subjected at one end to three 15 ft petrol flames. Results showed negligible damage to steel roof supports, very low spread of flame and lower temperatures within the building to make fire-fighting easier.

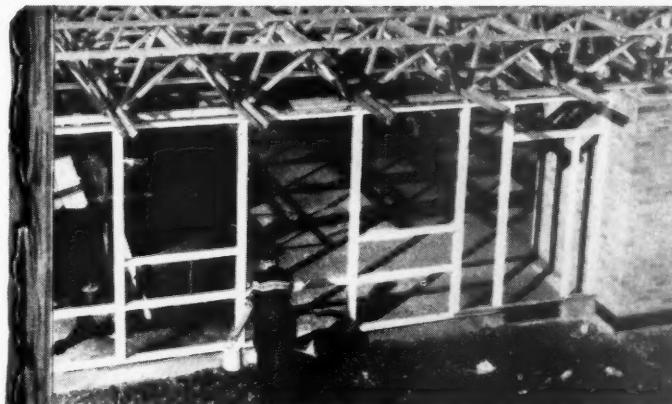
* Registered Trade Mark



specify
**CANADIAN
TIMBER**

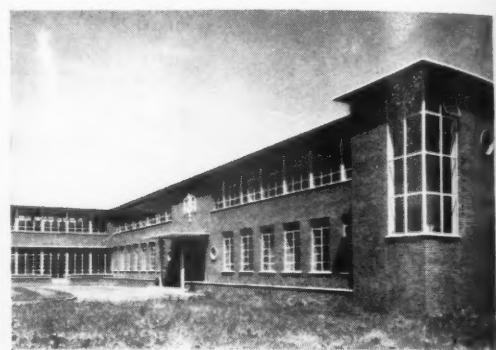
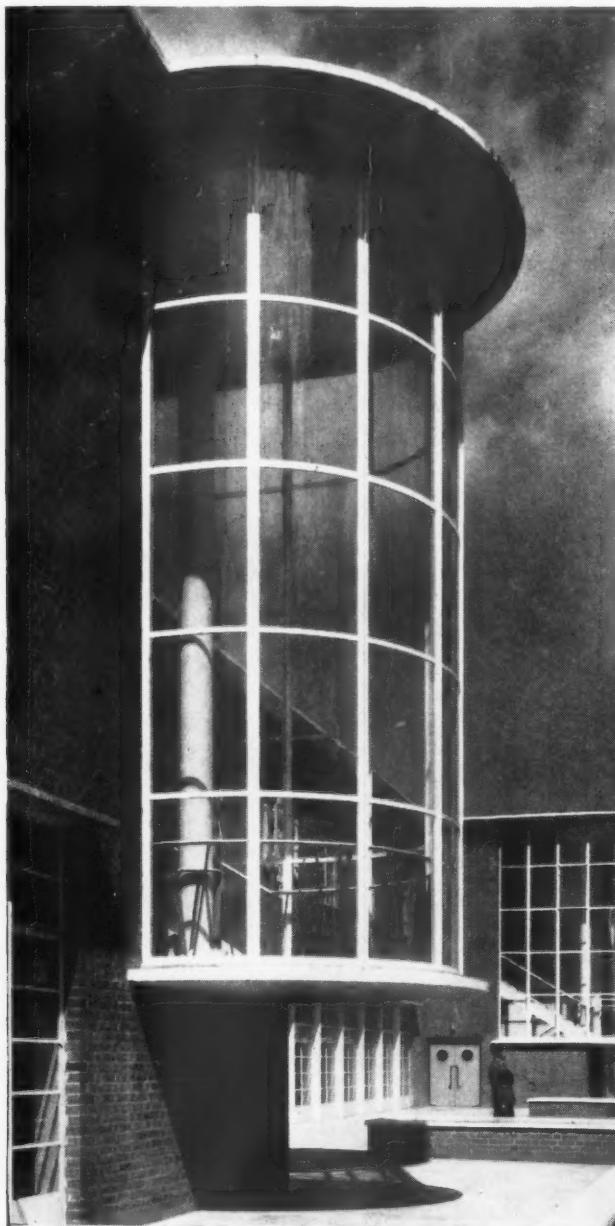
Pacific Coast Hemlock

A variety of Hemlock from the Canadian Pacific Coast. The texture of its timber is of high quality, being straight, even grained and light in weight. Its strength/weight ratio, freedom from pitch and resin, working, gluing and painting properties are superior to every wood of its type. Ideal for timber frame and general construction work, joinery, ladder stock, flooring, sheathing, and roof-boarding. *For further information, contact Commercial Secretary (Timber), Canada House, London SW1*



A new school
goes up:
space-framing
with light,
rigid, economical
Canadian Hemlock

**STEEL WINDOWS, BRONZE ENTRANCE
DOORS & BALUSTRADING**



**BURGES MANOR COUNTY SECONDARY SCHOOL FOR GIRLS
& EAST HAM COUNTY GRAMMAR SCHOOL FOR BOYS**

C. E. WELSTEAD.

**St. Andrew's Works.
TANFIELD ROAD
CROYDON**

Makers of STEEL & BRONZE WINDOWS, "ALL CLEAR" SLIDING & SOUNDPROOF WINDOWS, LANTERN LIGHTS, DOMES, ORNAMENTAL IRONWORK, STAINED & LEADED GLAZING

